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[p.13, A]

The Blood Group Genes of the Copper Eskimo[1]

BRUCE CHOWN AND MARION LEWIS
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121 143 [131] This report deals with the blood group and secretor genes of the so-called Copper Eskimo living on Victoria Island and the neighboring mainland, roughly between 100° and 120° west latitude and from the Arctic Circle to 72° north longitude. The report is part of a continuing study under the aegis of the National Museum of Canada of the populations which go to make up the population of Canada.

105 101 [161] The Copper Eskimo form an almost pure-bred population of about 1000 which has been stationary as to numbers since they were first studied by Jenness ('23) in 1913–16. Where they came from and how long they have lived here is unknown. The caribou and seal were their mainstays, providing food, clothing, fuel and housing materials, while in their territory was native copper which they used both for manufacture and for trade. Neither the east nor the west offered greater attractions, while the south was barred by Athapaskan-speaking Indians. It seems probable that they have occupied their present territory for a long time. On the other hand it is not to be imagined that they lived in complete isolation. Their neighbors 300 miles to the west about the delta of the Mackenzie knew of them, but only dimly; they spoke of them as "the people afar off." To the east and southeast they 175 had some slight contact with other Eskimo, and undoubtedly there was some intermar- 648 riage. With the Indians to the south they were apparently in a constant state of war, of small raids of extermination. So the earliest record we have of them is in Samuel Hearne's journal of his journey from Fort Prince of Wales on Hudson Bay to the mouth of the Coppermine River in 1771; in that venture the Indians who accompanied Hearne killed every Eskimo there encamped. Even so, from tales we were told, it is reasonable to believe that in other raids an occasional Indian woman

[1] [Footnotes appear on p. 138. — Analyst]

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or child may have been spared and incorporated into the population.

As to the other admixtures there was only a rare contact between Eskimo and people other than Indian from 1771 until about 40 years ago. These were not whaling waters. A few explorers and trades entered the area, some of whom married Eskimo women. These events are so recent that children of these marriages are still living, a number of whom we tested. Today there are two small white settlements, that at Cambridge Bay and that at Coppermine, and several still smaller implants.

[563]

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In the present study 330 out of the total of approximately 1000 were tested. With the help of Corporal and Mrs. D. McDougal of the R.C.M.P., Father LaPointe, O. M. and the Reverend Canon Sperry a detailed genealogy was drawn up. There were no first-cousin marriages.[3] The genealogy could not be carried far enough back to prove or disprove second-cousin marriages. Of the 330, only 10 could be proved to have white ancestors; these 10 were eliminated in gene frequency analysis. Such analysis was carried out for the remaining total 320 and for 46 among them who were apparently unrelated. While there is no significant difference between the two estimates, we think analysis based on the 320 is probably more accurate since phenotypes of low frequency were then represented. The estimates in the tables are so based. There is a high death rate in young adults, so it was unusual to obtain blood from children and both parents. Few genotypes could therefore be defined but in what family data we did obtain, there was no disagreement between expected phenotypes and those found.

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[n2]

[1] Assisted by a grant from the National Museum of Canada. Dr. Jacques Rousseau, Director.
[2] Postal address, 735 Notre Dame Ave., Winnipeg 3, Man., Canada.
[3] See addendum.

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SAMPLES, SERA AND METHODS

126 143 Samples were collected at Cambridge Bay, Holman Island, Reid Island and Coppermine in April, 1958 and the tests carried out at the Hudson's Bay Company post at Coppermine. With the exception of the specimens from Cambridge Bay (which were venous samples obtained for us by Dr. Gillison of the Department of National Health, sent by air to Coppermine and tested on the third day) all samples were of capillary blood taken into saline and tested on the day of collection.

121 128 143 The test sera had all been in use in our laboratory for some time so that their specificity and mode of action were well known. We had taken test cells of various known antigen constitution with us; these were used daily to control the results. Five methods were used according to the mode of action of the various sera; agglutination in a capillary tube by untreated serum (Chown and Lewis, '51) indicated below by "capillary;" agglutination in a capillary tube by serum mixed with activated papain (Lewis et al., '58) indicated below by "capillary papain;" the indirect Coombs technique of Race and Sanger ('58) modified to the extent that the final agglutination with anti-human-globulin rabbit serum (Coombs' reagent) was carried out in a capillary tube, indicated by "indirect Coombs;" agglutination in bovine albumin (Lewis and Chown, '57), indicated below by "short albumin;" open well slide, so stated below. In the following the serum is described first; the method is given after the semicolon. The letters in brackets are our code names for the particular serum used. Unless otherwise indicated tests were made at room temperature which varied from 18° to 22°C.

The ABO system. One each, high titre, avid anti-A and anti-B and one anti-A + B from O donor; capillary. One commercial anti-A_1 (absorbed B); open well slide.

The MNSs system. One commercial anti-M; capillary. One commercial anti-N; open well slide. One anti-S (Dev), one anti-s (Chei); capillary. One anti-M^g (UB no. 4), one anti-M^g (HA1); capillary. One anti-Vw(Gill); short albumin. One anti-He (Sha); open well slide.

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The P system. One anti-P (Wil); capillary at refrigerator temperature. One anti-Tj^a (Ell); capillary.

The Rh system. One each anti-C + C^w (comm.), anti-C^w (Bosh), anti-D (Faw); capillary. One each anti-c (Tod), anti-E (McL), anti-e (Hal); capillary papain. A further anti-c (Gal), anti-E (Ros), and anti-e (Sha) for those samples reacting as CcDee or ccDEe; capillary papain. (In every case the reaction with the check serum agreed with the reaction obtained with the primary test serum.) One anti-V (Ros); indirect Coombs.

The Lutheran system. One each anti-Lu^a (TG) and anti-Lu^b (TG); capillary.

The Kell system. One each anti-K (Nas), anti-k (Ort); capillary papain. One each anti-Kp^a (97B) and anti-Kp^b + K (Raut); indirect Coombs.

The Duffy system. One anti-Fy^a (Rig) and one anti-Fy^b (Mul); indirect Coombs.

The Lewis system. One anti-Le^a (Mou); capillary.

Other systems. One anti-Wr^a (Sbe); capillary at 37°. One each anti-Di^a (Woj), anti-Be^a, anti-By^a, anti-Yt^a (Cart); indirect Coombs.

Secretor status. Saliva samples were diluted one part to one part of saline, heated in a boiling water bath for 10 minutes, centrifuged and the supernatant tested, all of groups A, B and AB being tested for inhibition of anti-A, anti-B and anti-H; all of group O for inhibition of anti-H (Ulex). There were no discrepancies as between inhibition of anti-A or B and anti-H, while, since all proved to be secretors, the inhibition tests served to confirm the blood grouping.

RESULTS

The results are set out in table 1 to 9. The gene frequencies for the MN, Ss and Rh groups were determined by gene count, the others by square root methods or, as in the case of MNSs, by a combination. Those of group O who were P-negative were tested with anti-Tj^a and were positive. Hence, in that system, the frequencies are based on an assumed absence of *p*. Other than this the tables are self-explanatory.

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TABLE 1
The ABO system

Phenotype	Number	Frequency observed	Frequency expected	Number expected	Gene frequencies
O	146	0.4563	0.4583	146.66	O 0.6770
A_1	153	0.4781	0.4794	153.41	A_1 0.2914
B	14	0.0437	0.0438	14.02	B 0.0316
A_1B	7	0.0219	0.0184	5.89	
Totals	320	1.0000	0.9999	319.98	1.0000

TABLE 2
The MN system

Genotype	Number	Frequency observed	Frequency expected	Number expected	Gene frequencies
MM	221	0.6906	0.7092	226.94	M 0.8422
MN	97	0.3031	0.2959	85.09	N 0.1578
NN	2	0.0063	0.0949	7.97	
Totals	320	1.0000	1.0000	320.00	1.0000

TABLE 3
The Ss system

Genotype	Number	Frequency observed	Frequency expected	Number expected	Gene frequencies
SS	14	0.0437	0.0334	10.69	S 0.1827
Ss	89	0.2781	0.2987	95.58	s 0.1873
ss	217	0.6782	0.6679	213.73	
Totals	320	1.0000	1.0000	320.00	1.0000

TABLE 4
The MNSs system

Phenotype	Number observed	Frequency observed	Frequency expected	Number expected	Gene frequencies
MMSS	14	0.0437	0.0295	9.44	
MMSs	67	0.2094	0.2304	73.73	MS 0.1719
MMss	140	0.4375	0.4493	143.78	Ms 0.6703
MNSS	0	0.0000	0.0000	0.00	NS 0.0000
MNSs	22	0.0687	0.0543	17.38	Ns 0.1578
MNss	75	0.2344	0.2116	67.71	
NNSS	0	0.0000	0.0000	0.00	
NNSs	0	0.0000	0.0000	0.00	
NNss	2	0.0063	0.0949	7.97	
Totals	320	1.0000	1.0000	320.01	1.0000

TABLE 5
The P system

Phenotype	Number	Frequency	Gene frequencies
P+	107	0.3344	P_1 0.1843
P–	213	0.6656	P_2 0.8158
Total	320	1.0000	1.0000

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143

TABLE 6
The Rh system

Phenotype	Number	Frequency observed	Frequency expected	Number expected	Gene frequencies
CCDee	81	0.2531	0.2485	79.52	
ccDEE	78	0.2437	0.2407	77.02	
CcDEe	154	0.4813	0.4891	156.51	CDe(± Cde) 0.4885
CcDee	3	0.0094	0.0109	3.49	cDE(± cdE) 0.4906
ccDEe	4	0.0125	0.0106	3.39	cDe(± cde) 0.0109
ccddee	0	0.0000	0.0001	0.03	
ccDee					
Totals	320	1.0000	0.9999	319.96	1.0000

TABLE 7
The Duffy system

Phenotype	Number	Frequency	Gene frequencies
Fy(a+)	300	0.9375	Fy^a 0.7500
Fy(a−)	20	0.0625	Fy^b 0.2500
Totals	320	1.0000	1.0000

TABLE 8
Other systems

System	Phenotype	Number tested	Frequency
Lutheran	Lu(a−b+)	146	1.00
Kell	K−k+Kp(a−b+)	320	1.00
Lewis	Le(a−)	320	1.00
Secretor	Secretor of appropriate A, B, or (and) H substance	300	1.00
	Tt(a+)	146	1.00

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TABLE 5
Antigens apparently lacking (i.e., not demonstrated)

System	Antigen	Number tested (all negative)
MNSs	He	220
	M^v	220
	Mi^a	220
	Vw	146
Rh	C^w	220
	V	220
Diego	Di^a	220
Berens	Be^a	88
Batty	By^a	220
Wright	Wr^a	220

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DISCUSSION

The gene frequencies of this population are in some ways similar to, and in others

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143 different from, those of other Eskimo populations that have been studied. As to similarities there is, as in others, a low frequency of P_1, absence of K, of Le^a and of Di^a, and a high frequence of cDE. As to differences there are three of note. In the ABO system the frequency of B (0.0316) is low in comparison with that of the Eskimo of Alaska and southern Greenland, but is little if at all different from the frequency along the coast of Hudson Bay. In the Duffy system we proved by direct test the presence of Fy^b in the population and assume that it contains only the two Duffy genes Fy^a and Fy^b. On this basis the frequency of Fy^b is higher than in other populations we have tested. In the MNSs system the Copper Eskimo have the highest frequency of MS and the lowest Ns of any group we have examined. Judging by the following tentative frequencies there ap-

[P.17, A]

143 pears to be a cline from northwest to southeast, MS being replaced by Ns:

Population	MS	Ms	NS	Ns
Copper	0.1719	0.6703	0.0000	0.1578
West Hudson Bay	0.1524	0.6090	0.0000	0.2386
Baffin Island	0.1200	0.5943	0.0000	0.2857
Northeast Hudson Bay	0.1337	0.5646	0.0000	0.3017
Southeast Hudson Bay	0.0619	0.5662	0.0000	0.3719

114 The meaning of these differences is un-
143 certain. The ABO findings taken alone
144 could be used as evidence supporting the argument that the Eskimo living farthest south in Hudson Bay have a large admixture of Indian blood; indeed to the absurdity that they are pure blood Indians. But both the Duffy and the MNSs data destroy this argument. In point of fact so far as the MNSs data go the closer geographically the Eskimo come to the modern Indians the farther they recede from them genetically. It would seem to us that, as more complete blood groups and other genetic data accumulate, one can but conclude that there is no close genetic relationship between the Eskimo and the Indians of today. They may perhaps stem from a common stock, but if so the primary branching occurred a long, long time ago, while there has been little grafting since. Equally in our own studies there is surprisingly little evidence for replacement of Eskimo genes by genes of Whites. Such are present certainly, but not in such numbers in the populations we have studied as seriously to disturb the inherent Eskimo gene frequencies. If neither of these is the explanation of the variations then that explanation must lie within the Eskimo population itself.

114 The archaeologists have painstakingly de-
143 fined at least two Eskimo cultures in the
144 eastern Arctic, the Dorset and the Thule.
174 It would seem to us not unlikely that the people of these cultures differed genetically, perhaps as much as the Indians of today do from the Eskimo, and that there

[P. 17, B]

114 may well be in the present Eskimo popu-
143 lation a Dorset residuum which is genet-
144 ically recognizable. It is hardly to be ex-
174 pected that such recognition will depend upon the presence of a strange gene in one population that is absent from the other, but rather upon differences of frequencies of genes already known or to be discovered, differences such as are indicated in the above data. One can as yet draw no firm conclusions, but certainly the indications are enough to make further genetic studies, even more complete than the present one, worth-while.

SUMMARY

143 Blood group gene frequencies were determined based on samples from 320 Copper Eskimo as follows: *O*, 0.6770; *A*$_1$, 0.2914; *B*, 0.0316; *M*, 0.8422; *N*, 0.1578; *S*, 0.1827; *s*, 0.8173; *MS*, 0.1719; *Ms*, 0.6703, *NS*, 0.0000, *Ns*, 0.1578; P$_1$, 0.1842, P$_2$, 0.8158; *CDe*(±*Cde*), 0.4985; c*DE*(±*cdE*), 0.4906; *cDe*(±cde), 0.0109; Fy^a, 0.7500; Fy^b, 0.2500. The following phenotypes were found to have a frequency of 1.00; Lu (a − b +), K − k + Kp(a − b +), Le(a−) and Sec. The following antigens were not present in the population tested: He, M^a, Mi^a, Vw, C^w, V, Di^a, Be^a, By^a, and Wr^a. Differences between this population and other Eskimo populations studied were noted in the ABO, MNSs and Duffy systems.

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ADDENDUM

124 Since this article was written we have
582 obtained additional genealogical information from Mr. Wm. Joss, Manager of the

[P. 18, A]

124 582 Hudson's Bay Company post at Reid Island, who obtained much of it from Ageak, an Eskimo of some 70 or more years. Four out of 60 matings in the most recent major mating generation were between first cousins. We are deeply indebted to Mr. Joss and to Ageak for the great care with which they went into this question for us.

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REPORT

OF THE

CANADIAN ARCTIC EXPEDITION
1913-18

VOLUME XVI

MATERIAL CULTURE OF THE COPPER ESKIMO

By D. Jenness

SOUTHERN PARTY—1913-16

OTTAWA
EDMOND CLOUTIER, C.M.G., B.A., L.Ph.,
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1946

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28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

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Frontispiece. Man's inner and outer coats, one within the other. IV.D.777. Approx. 1/6.

[Frontispiece, facing P. i]

[P. 1]

MATERIAL CULTURE OF THE COPPER ESKIMO

INTRODUCTION

In 1914, when the Canadian Arctic Expedition established its headquarters at Bernard Harbour in Dolphin and Union Strait, on the western fringe of Copper Eskimo territory, the natives preserved their old culture, virtually unimpaired, despite contact with several explorers in the middle of the nineteenth century, and with others during the early years of the twentieth. The only visible change caused by these contacts was the introduction of a considerable quantity of iron, which the Eskimo hammered cold, as they hammered their native copper, and had already substituted for copper in knives, adzes, harpoon heads, and needles. From lack of ammunition the only men who possessed rifles, five in number, had fallen back on the bow and arrow, which was still the universal weapon of the chase. Of the arrows not tipped with bone about two-thirds bore tips of hammered copper and only one-third tips of iron; the ice chisel and other tools retained their copper blades and points; and the soapstone pot for cooking meat held undisputed sway in every household. All clothing was of skin or fur, mainly from the caribou and the seal; and in cut and adornment it followed without change the styles set by earlier generations. The blubber of the seal, burned in a soapstone lamp, provided the only artificial light, and throughout the winter months all the energies of the Eskimo were concentrated on the pursuit of seals at their breathing holes in the sea ice.

Ten years later the situation had undergone a profound change. Native copper had become practically valueless and served for rivets only. Bows and arrows had disappeared, because every native was now armed with a high-powered rifle. Other weapons and tools had steel or iron blades, metal cooking pots had ousted the soapstone vessels, and primus lamps and kerosene lanterns were spreading from home to home. Fur clothing was tending to follow western Eskimo patterns, and to be overlaid with bead-work, or with imported garments of cotton or wool. Dissatisfied with the old-fashioned snow-hut and skin-covered kayak, one native had even erected a plank cabin heated by an iron stove, and purchased a motor-boat to transport his household goods along the coast during the brief summer months. The tentacles of the fur trade had firmly gripped the region, and the trapping of foxes, animals of no economic importance in earlier times, now rivalled in importance the hunting of seals and caribou.

Fortunately, before this revolution occurred, the Canadian Arctic Expedition had brought out a large collection of Copper Eskimo specimens, nearly all of which are now stored in the National Museum at Ottawa. These specimens, and

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

These specimens, and random field-notes made during the course of the expedition, provide the foundation for the following report. It has been written at odd times during the last 25 years, but was so nearly complete by 1932, when the late Knud Rasmussen published his splendid "Intellectual Culture of the Copper Eskimos" (Reports of the Fifth Thule Expedition, 1921-1924, vol. IX, Copenhagen, 1932), that it seemed advisable to let it stand without any change or revision; consequently, the reader will find no references to Rasmussen's work.

In this volume the series of "Reports of the Canadian Arctic Expedition, 1913-18", reaches its conclusion. There will be no archæological paper, as originally planned, describing the Eskimo ruins on Barter Island.

I am indebted to Miss W. K. Bentley and Mr. O. E. Prudhomme for all the drawings in this volume except those in colour, which were made in the field during the winter of 1915-16 by the late Rev. H. Girling, the first Anglican missionary to visit the Copper Eskimo.

CHAPTER I

MATERIAL RESOURCES

Few people have been called upon to sustain life and perpetuate their race on such meagre resources as the Copper Eskimo. Even if they had been acquainted with agriculture the climate debarred it, just as it debarred the growth of trees except in two or three sheltered valleys along the southern fringe of their territory. It restricted not only the flora but the fauna, leaving the natives dependent for their food and for much of their equipment on one land animal, the seasonally migrating caribou, and two sea mammals, the foetid and the bearded seals, supplemented by such fish as they could capture in rivers, lakes, and bays. Ignorant of all metals except their native copper, which seemed to them only a malleable stone, and cut off from contact with any but neighbouring tribes, little or no more advanced than themselves, they had to build up their lives on the scanty resources provided by their own narrow environment, and rely on their own ingenuity to supply all their needs.

The resources provided by their environment fall naturally into four groups:

- Wood
- Stone (including native copper and other minerals)
- Bone, antler, horn, ivory
- Hides and sinew.

WOOD

The Copper Eskimo obtained their wood from two sources. First, there was the driftwood, mainly spruce and cottonwood, carried to the ocean by Mackenzie River far to the westward and borne by the winds and currents to Dolphin and Union Strait and western bays of Victoria Island. Then in the valleys of three rivers that flowed into Coronation Gulf, Coppermine, Napaktauktauk, and Tree, there stood scattered groves of spruce, small and stunted, a few miles from the coast, but larger as one proceeded south. Far to the southeast, too, near Thelon River, were other stands of spruce that the Eskimo from Bathurst Inlet and from the eastern shores of Victoria Island occasionally visited in their wanderings. Thus the Copper Eskimo had abundant wood to satisfy all their needs; but as driftwood was very scarce in many districts, and the standing timber on the southern fringe of their territory could be reached only after a long journey overland, which many natives were disinclined to make, manufactured objects of wood were among the commonest articles of trade and passed freely from one end of the territory to the other. Moreover, so crude were the Eskimo tools, and so great the labour of cutting down the trees and hewing the timber into shape, that any object of moderate size, such as a sled-runner, a table, or even a tent-pole, commanded a high price.[1]

The principal tools used in working wood were the adze and the whittling knife (*See* pp. 100 and 103). Bone or antler wedges, generally made for each occasion and immediately discarded, served to split small logs and planks; they were driven home with boulders. Lacking saws, the Eskimo shortened a plank in one or other of three ways: they hacked it with the adze; gouged it across with the grooving tool (*See* p. 100); or they drilled a line of holes across it with the bow drill.

[1] Cf. Stefansson, V.: The Stefansson-Anderson Arctic Expedition: Anth. Papers, Amer. Mus. of Nat. Hist., vol. XIV, pt. I, pp. [illegible], [illegible] *et al.*, New York, 1914.

412 Two incidents that came directly under my notice in the summer of 1915
322 were fairly typical. A native with whom I was travelling in southwest Victoria Island discovered on the beach a long, nail-studded plank that had presumably fallen overboard from some vessel. He carried it several miles inland to our camp, and there spent half a day splitting it into poles for fish-spear handles, two of which he sold to a kinsman. A few days later another native found a second plank, which he proposed to convert into a sled-runner, and with this purpose in view trimmed it slightly with his hunting knife. After consulting his companions, however, he decided that a new sled-runner was not needed, so he turned the
[239] plank over to his stepfather to fashion into tent-poles. In each case the native split the plank with a crude antler wedge driven home by a boulder.

322 The uses of wood were naturally manifold. From it were made the sled,
[302] the tent-poles, the frame of the kayak, the snow shovel, the table, food trays, and other articles too numerous to mention. Odd chips of wood sometimes served as fuel during the summer months, although the Eskimo preferred
824 heather or willow twigs. Willow twigs had a special use; sewn together in a
513 long strip they provided a mattress to protect the bedskins from the snow.

STONE

333 Stone (apart from native copper) played an astonishingly small rôle in the
[342] economy of the Copper Eskimo. Their winter home was invariably the snow-hut, although their predecessors in the region had dwelt in huts of snow or wood, whose ruins could still be traced in numerous places along the coast. Loose stone boulders held down the edges of the Copper Eskimo tents; pillars of stone (in many cases flat slabs of dolomite easily piled one on top of another) supported kayaks, sleds, and other goods that were temporarily abandoned during the summer months; and heaped-up boulders protected caches of meat or clothes from the ravages of foxes, wolves, and birds; but any real construc-
324 tion in stone was conspicuously lacking. There were no stone knives or adzes,
412 no arrow heads tipped with stone, no stone sinkers for fishing lines or nets, and no stone scrapers for use on wood or hides, although implements of all these types had been used by the earlier inhabitants and were sometimes gathered as curiosities by the Copper Eskimo themselves. There were stone hammers and whetstones, it is true, but these were merely unshaped pebbles picked up when
[415] the need arose and afterwards discarded. In short, stone provided the material
[354] for two objects only, the lamp and the cooking pot; and the stone cooking pot
[179] was discarded soon after our visit in favour of iron vessels brought in from the outside.

135

Figure 1. Lamp of native copper. IV.D.1441. 1/1.

324 These two vessels, the lamp and the cooking pot, were invariably made from
415 soapstone (talc chlorite schist), originally with copper-bladed adzes, but in our
354 time with adzes of iron. Freshly quarried soapstone readily scratches with the
316
[135]

fingernail, so that the labour of manufacturing even a large vessel was comparatively slight, never requiring more than a few days. We saw no pots made of any other material, but from Prince Albert Sound we obtained two lamps, one fashioned from a red sandstone, the other from an igneous rock, that could hardly have been hollowed out with adzes in the ordinary way, but must have been shaped by some pecking and grinding process. Their owners knew nothing about their manufacture, and there is good reason to believe that they were not made by the Copper Eskimo, but came in from Hudson Bay.[1]

As stated in the introduction, the natives considered their amygdaloidal copper,[2] which took the place of stone, bone, or ivory in so many of their implements, as merely a peculiar stone that they could work into shape, cold, by hammering with boulders and pebbles (Figure 1). Whether they were able to drill copper before they obtained iron is uncertain; if so, they must have used stone- or copper-pointed drills. In our time they still retained one or two of these copper-pointed drills, but used them, so far as we observed, only on bone, antler, and wood.

Figure 2. Lamp of galena, used for marking skins. IV.D.200. 1/1.

The only important mineral besides copper was iron pyrites, which the Eskimo gathered mainly in the beds of two streams, Kugaluk River in the southwest of Victoria Island and a creek a few miles east of Coppermine River. There were other sources, however, that I failed to record. This mineral served the natives instead of flint and steel for striking fire. They possessed also a few fragments of galena (Figure 2) and litharge, which they used for marking skin and wood; the galena came mostly from Galena Point in Bathurst Inlet, but the source, or sources, of the litharge is not known.

BONE, ANTLER, HORN, IVORY

The caribou and the musk-ox supplied nearly all the bone that the Copper Eskimo required, although for shoeing the runners of their sleds they used rib bones from occasional whales that drifted up on their shores. There was hardly a bone in the two land animals that could not be turned to some purpose. Leg bones were in special demand for skin stretchers, for needle-cases, and for sheathing the wooden ends of harpoon shafts; another type of skin stretcher was fashioned from a caribou or musk-ox shoulder blade. The ribs served for handles of various kinds, for small toggles, pins, and bows for the drilling set. Other toggles were made from the breast or pelvic bones, and the astragalus provided a ready made mouthpiece for the drill.

The caribou alone provided antler, which was just as useful as bone, and interchangeable with that material for most purposes. On the other hand, ivory, which Eskimo elsewhere often substituted for bone and antler, was extremely rare, because neither the narwhal nor the walrus frequents the waters adjacent to the Copper Eskimo territory; consequently, the few ivory objects we saw among the natives almost certainly reached them by trade from the east or the west. Sheep likewise were absent, so that all the horn in use came from the musk-ox. This horn sometimes took the place of bone or antler, but it was especially prized for the manufacture of ladles, scoops, drinking horns, toggles for the sled, and hammers for pounding blubber.

Originally the Copper Eskimo used only four tools, all with copper blades, for shaping bone, antler, and horn, viz., the adze, the whittling knife, the grooving

[1] See p. 66.

[2] For the sources of this copper see Reports of the Canadian Arctic Expedition, vol. XII, pt. A, p. 32; vol. XI, pt. A, p. 33 et seq.

321 412 tool, and the drill. In our time nearly all these tools had steel or iron blades, and a fifth had been added, a small saw with a blade of hoop iron. Saws were not numerous, however, and it was still a common sight to see a native scoring deep cuts in bone or antler with his grooving tool and then breaking out sections with his adze. The curved whittling knife gave the final shape, and rubbing, first with stone or sand and then with a strip of hide, the smoothness and polish. Musk-ox horn alone was susceptible of a different treatment; to make from it ladles and scoops, the natives split it longitudinally, steamed it over their cooking pots, then opened it out and bent it to shape by simple pressure and hammering.

237 There was current among the Copper Eskimo one other substance similar to the foregoing, baleen, but it was rather scarce, and in the eastern part of the territory almost unknown. Whether it came from stranded whales, or was brought in from the west, I did not discover. The natives used it, apparently, 232 for fishing lines only, lines mainly for catching tomcod during the winter months 224 when the more usual lines of sinew tended to become brittle with encrusted ice. 283 I never saw them cut or split baleen, but doubtless they used the whittling knife for this purpose.

HIDES AND SINEW

237 [433] It is hard for the civilized inhabitant of a warmer country to realize the immense importance of skins in the domestic economy of the Copper Eskimo. They provide him with clothes and bedding throughout both winter and summer, bags in which to store his clothing, a tent for use nearly half the year when a snow-hut was either uncomfortable or impossible, a cover for his kayak, straps and lashings for his sled, harnesses and traces for the dogs, lines and lashings for harpoons and other weapons, packing lines, dog packs, water buckets, pokes for meat and blubber, and other articles for which Europeans utilize cloth, rope, or metal. It was, consequently, of the utmost importance to the native that he should know how to treat skins to the best advantage. Fortunately, the two animals on which he depended most for his food, the seal and the caribou, were precisely the ones whose hides were the most useful.

281 [225] *Seal Skins.* The Copper Eskimo had two methods of skinning a seal. They generally made a cut around the base of each flipper, another around the neck, and a third down the belly, after which they separated the skin from the blubber with a knife. As it was impossible to remove all the blubber in this way, the skin was then soaked in warm water. Holding one end in her mouth while the [462] other remained in the pot, the woman (for the work almost invariably fell on [412] the housewife) scraped it thoroughly with her curved knife. As soon as the weather was warm enough she set it out to dry, sometimes on top of the house, sometimes on the ground, sometimes pegged over and around a block of snow.

A sealskin thus dried was roughly oval in shape and still retained the hair [415] on the outside. If you folded in the ends, doubled it over and tied a line to each end, you had the common Copper Eskimo fishing bag; if you laced each [492] end across through the holes by which it was pegged out, you had a dog pack, broad and flat in the middle where it rested on the animal's back, and bag-shaped at each end for holding the meat or clothing. The hair was no 281 disadvantage in such skins; indeed, for raincoats and for spring foot gear it 294 was indispensable, but as the skin was more supple without it, it was generally removed by resoaking in warm water and scraping with a knife. To soften the skin still more, and to change the outer surface from a dark colour to white, it was subjected to further scraping, and, after drying, rubbed between the hands and chewed between the teeth, when odd scraps that came away found lodging in the chewer's stomach. From these creamy white skins were made the sealskin

shoes worn by both sexes during the greater part of the year. Steeped in urine for several hours they became waterproof, and served for summer boots, water buckets, quivers, and other articles. 281 294

For lines and lashings (which the men made, not the women) it was not necessary to tan the skin; after the removal of the hair the man merely soaked it for a third time in warm water, and cut it in a continuous spiral with his curved whittling knife, while his wife or a friend held the severed parts taut and slightly apart. In cutting he simply pressed the knife, guiding it with his thumb from below, but wherever the strip was very narrow he generally sawed the blade up and down, holding the severed parts in his left hand and guiding the blade with the left index. Newly cut lines were stretched taut between two or more poles out of doors to dry. 281 283 [462]

The second method of skinning a seal was used only when the owner required a bag with a small opening for storing blubber. The woman then cut the skin around the base of the neck and from the bottom of one hind flipper across to the other. To separate the flesh from the skin—and as far as possible also the blubber—she circled the long snow-knife round between them from each end; then by drawing back the flippers and severing them at the joints with her curved knife, she could draw off the skin over the tail. Subsequently she cut away most of the adhering blubber and sewed up the bottom, leaving the neck open to be tied with a sealskin cord when the poke was filled. In most cases she sewed a strap handle to each end to facilitate handling, as these pokes when filled with blubber weighed from 150 to 200 pounds; if the poke was small, however, she substituted for the straps a short stick thrust through the neck. The Copper Eskimo never skinned an animal through the mouth after the manner of the western Eskimo, or closed their pokes with stoppers. 281 225 [412]

Although bearded seals were numerous in Dolphin and Union strait, the Eskimo secured very few; and they used for harpoon and sled lines most of the skins of those they did kill, though they were fully aware of the superiority of bearded over foetid sealskins for foot gear. Even their kayaks they covered with the skin of the much commoner foetid seal. Naturally, they treated both kinds of skin in the same way. [136] [501]

Caribou Skins. More important even than sealskins to the Copper Eskimo were the caribou skins from which he made his bedding and the greater part of his clothes, as well as dog harnesses, spring and summer tents, and many other articles that were absolutely indispensable. He skinned the caribou in a way slightly different from that of the ordinary white hunter or from that of the Indians to the south. Beginning at the throat, he cut right down the belly to the tail, then from the hock of each leg up the back as far as the knee, continuing up the inside of the thigh until he reached the incision along the belly. He next punched away the skin from the body down one side, drew out the tail and pulled the skin off down to the feet, where he cut it away at the level of the front of the hoof. Then he slit it down the side of the cheek through the eye and round the base of the horn, and punched it loose with the handle of the hunting knife. Rolling the animal over, he pulled out the skin from below, punched it free of the whole body, and stripped it off down the remaining two legs. A final cut down this cheek similar to the one on the other side, and a few more punches, completed the operation. Thus the skin of the head was removed in three sections that joined at the neck; but the middle strip ran from between the horns to the top of the nose only, as the Eskimo never troubled to remove the skin around the nostrils. Whenever the horns were in the velvet the hunter could jerk the skin over them; but with old bulls whose horns had many branches and roots almost meeting on the forehead, he was often satisfied to strip only the cheeks and leave the skin on the middle of the face untouched. Occasionally he slit from the nose down to midway between the horns, leaving 281 281 224

a large hole where these protruded through and two small holes that marked the eye sockets. The ears he usually cut off at the roots, and pulled them out of the skin with his teeth at his leisure; but in certain circumstances, when it was forbidden to use a knife, he pulled free the outer integument on the spot.

In the late spring, when the caribou was putting on a new coat, the winter hair remained longest on the throat and belly. As this part was useless for clothing, the hair being prone to shed, the Eskimo frequently preserved only the part on which the new coat had already formed and threw the rest of the skin away. In such cases the preliminary incisions for removing the skin followed the outlines of the short hair. Often, however, the native anticipated the natural shedding of the winter hair by pulling it out with his thumb and fingers, leaving the new coat very short and spotted with white hairs, but in this condition highly prized. Later in the season, when the belly of the animal was covered with short white hair, invaluable for trimming, he made a cut along each flank and removed that part of the skin before detaching the remainder.

Blood stains were extracted by rubbing or stamping the skin in hard snow, which acted like damp blotting paper; or by steeping it in cold water and squeezing the hair. The Copper Eskimo woman was very careful not to allow a green skin to dry before scraping away with her curved knife the fat that still adhered to it; and as these scrapings were pure fat, she generally ate them at once, or put them aside for future consumption. Then she stretched the skin out to dry by pegging it to the ground with sticks or weighting down the edges with stones; the white belly skin and the large short-haired skins intended for bedding she always pegged down in order to stretch them as much as possible. When travelling across country day after day in the short Arctic summer, the skin was laid over the back of the pack or across a long pole; and at every halt it was stretched out afresh on the ground to hasten the drying, because a green skin weighed twice as much as a dry one. Once the skin was dry it could be laid aside and not touched again until needed. Then the owner sewed up the rents and scraped the whole underside with the copper- (now iron-) bladed scraper (*See* p. 84). The woman (or man, for the men often scraped skins while the women sewed them) sat back on the sleeping platform, or on the ground outside the tent, and stretched out the skin in front of her. Holding it tightly pinioned at the bottom between her crossed legs, she pulled it taut above the knee with her left hand and scraped rapidly downwards away from her with the right. A sudden relaxation of the leg, and a quick jerk, found her scraping in a new place. To the onlooker her body seemed strained and her attitude very uncomfortable, but long practice greatly reduced the fatigue, though the labour really was hard. Indeed I have seen the perspiration rolling down a woman's face as she scraped a skin outdoors when the temperature was below zero Fahrenheit.

The Copper Eskimo woman often ate the scrapings that came away during this operation, although they contained very little fat. To soften the skin still further she rubbed tepid water over its under surface, folded it up, and laid it on one side for a few hours. Then she scraped it again, this time with an instrument made from the shoulder blade of a musk-ox, which merely stretched and softened the skin without removing anything from its surface (*See* p. 83).

The stretching and softening of the skin was usually the last process it underwent before it was made up into clothing. If, however, the woman desired the skin without fur, as for making the upper legs of her long boots, she scraped the hair from the dry skin with her curved knife. Copper Eskimo clothing was often decorated with red, black, or white bands; the white was the natural colour of the skin; the red was produced by rubbing with litharge; and the black parts were either untanned sealskin, or else seal or caribou skin stained with galena. Ordinary dirt stains on white deerskin could be removed with dry snow.

Caribou leg skins were made into dog harnesses, snow mittens, and winter boots. The ears were used to trim the fronts of trousers at the waist line, or the backs and hoods of coats. The light skins of unborn fawns, or of fawns only a few days old, made serviceable clothes for tiny children, as well as summer caps to protect the head from mosquitoes, though for this last purpose marmot skin was often used instead. There were certain fashions in clothing. The heavy winter outer coat (*qulitaq*) was normally made from autumn skins, an adult's coat from the skins of the larger caribou, and a child's coat from yearlings and fawns. The two everyday coats, the *ilupaq* or inner coat and the *kapitaq* or outer coat, were of very short-haired summer skins; so, also, were the trousers, though for winter sealing it was advisable to have the outer pair of the thicker autumn skin. The same principle applied to the rest of the clothing and to the bedding; wherever warmth was especially requisite, autumn skins were necessary; otherwise the Eskimo preferred the light summer skins.

The spring skins of caribou were thrown away except in emergencies, because they were full of holes from the escaping larvæ of the warble-fly, and the hair was shedding to make way for the summer coat.

Other Skins. Polar-bear skins provided very useful "sleds" in spring, when the frozen mud runners of the ordinary sled melted and dropped off. There seems to be an oil in the hair of the polar-bear skin that renders it impervious to water; hence Copper Eskimo travellers commonly used a mitten or pad of bear skin to ice their sled runners. For the same reason sealers preferred a foot-pad of bear skin to one of caribou skin, which sheds its hair with dampness. The natives of Prince Albert Sound and Minto Inlet sometimes used bear skin for clothing, more especially for trousers, because caribou were less plentiful in their districts than farther south. The animal was skinned in the same way as a caribou.

So few brown bears were killed that there was no established use for their skins. Musk-ox skins, on the other hand, were much sought after for bedding, being laid under the caribou skins on top of willow matting. The northern natives sometimes made heavy coats from them.

Hares, foxes, ermines, and marmots were all skinned in the same way. A cut was made up the back of each hind leg and across to the tail, and the skin pulled off forwards. The forelegs were drawn out and severed at the ankles, and the ears were pulled out with the teeth. The tail of the fox, owing to its exceptional length, was often slit half-way down. Hare skins were used only for towels or socks, but fox skins up to at least a generation ago were sometimes made into coats. One of the dance songs popular in 1915 among the Dolphin and Union Strait Eskimo commemorated its use in this way.

The ermine was prized very highly as an ornamental appendage to the coat; consequently, the sight of one of these animals always occasioned the greatest uproar and excitement in a camp.

Of more value to the Copper Eskimo than all the other small animals was the marmot; from its skin they made coats, trousers, caps, trimmings for the tops of snow mittens and boots, and linings for the soles of caribou skin socks. From the same skin, also, they made tool bags and pouches for holding the fire apparatus. As a rule, however, marmot skin coats and trousers were confined to children, because their use by men suggested a lack of skill in caribou hunting. The natives of Victoria Island obtained their marmot skins by barter, as the animal does not extend beyond the mainland.

The Copper Eskimo killed very few wolves or wolverines until they obtained rifles and traps. We saw one man wearing a heavy coat of white wolf skins, and wolverine skins were probably put to similar use; at all events the natives readily made a sleeping bag from wolverine skins for a member of our expedition. They skinned birds in exactly the same way as small animals, except that

223 They skinned birds in exactly the same way as small animals, except that
237 they tore the skin of a small bird down the legs without cutting it, and, when
825 drawing the skin over the head, held the feet in the teeth instead of tying them
136 to a tent-pole or other convenient object. Loon skins made excellent whisks for beating off the mosquitoes. The bill of the largest species of loon, *Gavia stellata*, was frequently sewn to the top of the dancing cap; and the feet skins of swans, geese, and ducks converted into tinder bags. Every household had its stock of ptarmigan skins for use as dusters, and to wipe the hands and face after eating or handling blubber; one skin served the whole family and all its visitors until every feather was worn out. The Eskimo used other bird skins for the same purpose, especially sea-gull skins, the oily feathers being naturally more suitable for towels than ptarmigan feathers. The skins of fish were usually beaten. The Copper Eskimo, unlike others of their race, never made any real clothing from fish or bird skins, although sometimes they stuffed a few feathers or the skin of a loon inside their sealskin shoes.

[301] [46] [55] [242] [294]

CHAPTER II

DRESS AND ADORNMENT

Excluding the outer shoes, which were made of sealskin, it required no less than seven caribou hides to furnish the adult Copper Eskimo with one complete suit of clothing for winter travel; and every man really needed two suits, besides a raincoat and special footgear for the spring and summer months. In winter his costume comprised two frocks or coats (*atigi*) worn one inside the other, the fur of the outer on the outside, and the fur of the inner against his body; an overcoat (*qulitaq*), whenever the weather demanded it; two pairs of breeks (*qaqlik*), worn in the same way as the coats; two pairs of stockings worn similarly, and reaching to just below the knees (inner pair *alektik*, outer *mitqulik*); a pair of caribou fur slippers (*ihupeqquk*) between the stockings; and low sealskin shoes (*tuktukaluk*) as a final covering for the feet. A pair of mittens completed the outfit. The overcoat, unlike the outer garments, which were fashioned from summer skins, was made from the heavy winter coat of the caribou, and generally required two full skins for its manufacture. Of the two ordinary coats or *atigi*, the outer (*kapitaq*) also required the greater part of two skins because of its ornamental pattern, but the inner coat (*ihupaq*) could usually be made from one hide. Two more hides, with the fragments left over from the coats, generally sufficed for the breeks, footgear, and mittens. Caps were fairly common, but, apart from the ceremonial dancing cap, were worn mainly by children, as the ordinary coat nearly always carried a hood that could be drawn up over the head.

MEN'S CLOTHING

Coats. Except that they were closed down the front and provided with a hood to cover the head, men's outer and inner coats resembled in most cases the formal evening dress of Europeans; for in front they were cut away at the waist, and behind they trailed a tail that extended anywhere from below the knees to the ankles. Outer and inner garments alike were normally fashioned from caribou furs, the outer always, and the inner usually, from light summer skins. The outer alone was decorated with special insertions, and it, therefore, differed considerably in make-up from the inner coat, although Eskimo seamstresses did not adhere in either garment to one unchanging pattern, but varied the numbers and positions of their seams according to the shapes and sizes of the skins at their command. The sleeves of both garments were always a separate addition, not put together in any set way but pieced from fragments of skins. In inner coats all the back and the greater part of the hood were generally cut out from one piece of skin; the shoulders, front, and sides were either from one skin section also, or else from two joined together in a straight line from chin to waist. In outer coats, if we omit the decorative insertions, one piece gave the long tail and nearly all the middle of the back, a second the sides of the back and such of the front as was not filled by insertions; two small oblong pieces then filled the gaps, if any, under the arms, and a fifth piece, which carried with

291 it a narrow appendage running half-way down the middle of the back, gave the
294 hood, except for a wide border around the face. Figures 3 and 4 show how the
281 patterns of the two coats differed.

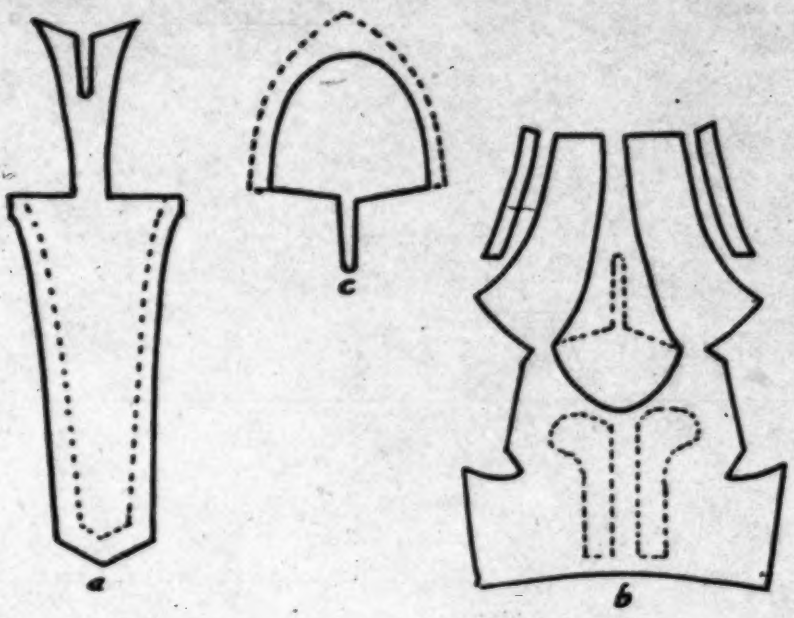

Figure 2. Pattern of man's outer coat; a: back; b: front and sides; c: hood.

294 There were naturally certain rules governing the cutting of skins for the
281 outer coat, but I failed to record them. Fashion decreed that between the shoulder blades should glisten a spot of white fur, preferably the tip of the caribou's tail; hence many women used the fur on the animal's rump and tail for the hood and for its narrow appendage down the back. Other women merely sewed to the end of this appendage a little splash of white fur from the animal's belly, which produced exactly the same effect. A second very common fashion was to adorn the hood with the two upstanding ears of the caribou; so many women made this part of the garment from the fur on the head and neck. Other women used the head and neck fur on the back of the coat so that the ears fell between the shoulder blades. The shoulders were always proportionately larger than in European coats, in order that the arms might be easily withdrawn from the sleeves; and around the margin of each garment, on the inside, was sewn a narrow band of dehaired skin, white or red, to prevent the edges from curling. It was customary to peak the hood of the coat, and this peaking, with the two upstanding ears and the long tail trailing between the legs, gave a stooping Eskimo so close a likeness to a caribou that it sometimes deceived his dogs hauling on the sled behind him and spurred them on to greater effort.

The decoration on the outer coat consisted of insertions of white fur, and, on the whole, varied little from one coat to another. Covering each breast were two broad thrusts of this fur, edged at times (particularly among east Coronation Gulf natives) with stripes of dehaired skin, stained red; between them often ran a narrow vertical strip of the same material. All the borders were fringed with white, one or, less often, two narrow white bands paralleled the edges of the tail and hood, and one or two encircled or half encircled each upper arm. 294

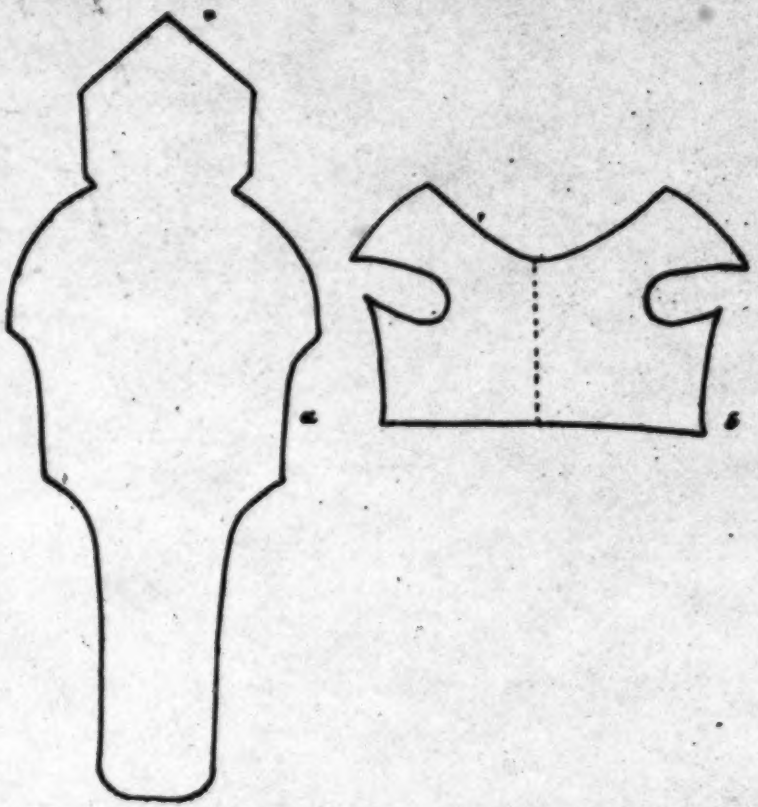

Figure 4. Pattern of man's inner coat; a: back; b: front.

Strings of white fur 6 inches or so long hung down from the edges, from the backs of the shoulders and the hood, and from the white armbands. In Coronation Gulf these strings were generally spaced evenly and formed continuous lines, but in Dolphin and Union Strait it was more usual to group them in clusters of three or four. The frontispiece, and Figures 5 and 6, show the striking effect produced by the white insertions on the background of plain brown fur. (184)

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Figure 8a. Man's coat, front.

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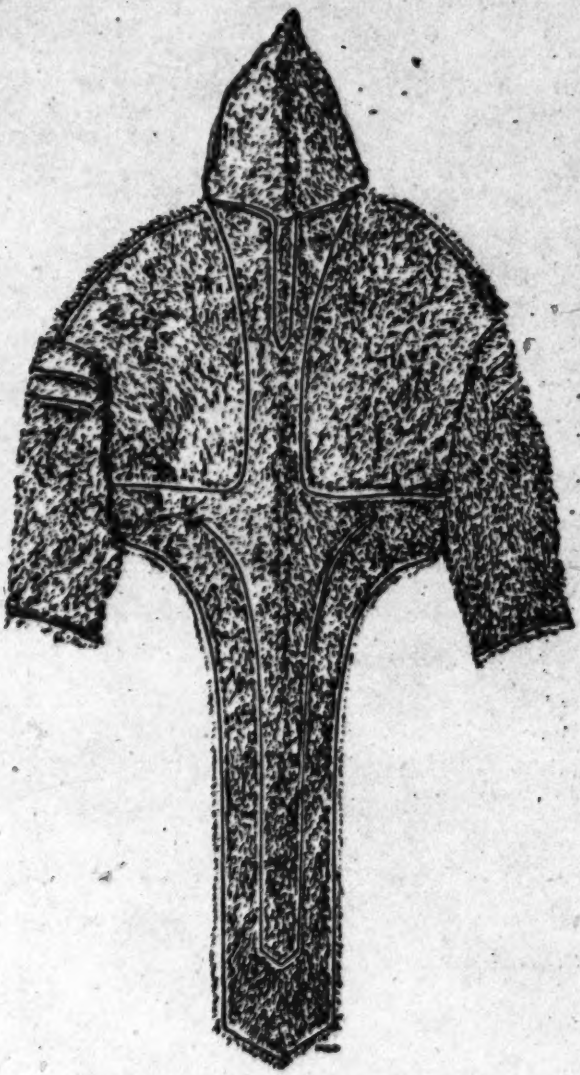

Figure 8b. Same coat, back. IV.D.988. Approx. 1/6.

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Figure 6. Back of man's outer coat. IV.D.777. Approx. 1/6.

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In these decorated outer coats the white front stained rather easily, and the high waist was unsuitable for travelling in cold weather because it gave inadequate protection to the stomach. The latter defect could be partly remedied by slightly lengthening the front of the inner coat so that it would overlap the trousers by several inches. This the Eskimo often did. Even so, however, they generally reserved the short-waisted outer coat for evening wear, or for occasions when they wished to appear well dressed; and they wore for working and midwinter travelling an outer coat of heavy winter caribou fur that was nearly as long in front as behind, and that carried no decoration beyond an occasional white armband.[1] Many natives at the east end of Coronation Gulf, and one or two at the west end, affected a compromise garment; they wore both at home, and when travelling, a coat of moderately light fur that in pattern and decoration conformed to the style of the short-waisted coat, and could, therefore, take its place on ceremonial occasions, but which reached in front nearly to the knees, sometimes even below, and adequately protected the body in stormy weather[2]; on warm days it was often "pinned up" by hooking loops of sinew from the bottom edge to small toggles of wood attached around the waist. These same natives, however, nearly always possessed the heavier, undecorated coat so serviceable for midwinter sealing, and even at times the short-waisted coat. In such cases they occasionally dispensed with a hood on the latter garment, as it was no longer needed for outdoor wear.

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We encountered in Bathurst Inlet a native who had modelled his coat on the style current among the Back River and other Eskimo living inland on the Barren Grounds. The tail, instead of being narrow and rather oblong, was broad and rounded, and separated from the equally long and rounded front only by a deep slit up each side. Long strings of dehaired caribou skin hung in a close-set fringe from all the lower border.

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Nearly all Eskimo men possessed still another outer coat, made not from caribou fur, but from the skin of the common foetid seal. It had the same shape as the heavy winter sealing and travelling coat, but was generally a little shorter, seldom reaching as far as the knees. It served primarily as a raincoat during the damp days of summer when caribou fur sheds its hair, but a few natives wore it also for sealing during the months of May and early June when the snow is wet and soggy. Naturally, it was never decorated; even its bottom edge was seldom trimmed evenly, but often retained the holes through which the green skins had been pegged out to dry (Figure 7).

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Inner and Outer Trousers. In winter, men wore two pairs of caribou-fur trousers (*qaqlik*), with the fur of the inner, as usual, against the body, and the fur of the outer turned outwards; in summer they laid aside the outer pair and wore only the inner, still with its fur inward. Both were approximately of the same length, barely overlapping the tops of the stockings; occasionally the inner pair was one-half inch to an inch longer (Figure 8). This inner pair was not decorated in any way, but often had a fringe of long-haired fur around the bottom, to protect the knees, as neither the inner nor the outer trousers carried drawstrings to bind them around the legs. The inner were often made from the heavy winter fur of the caribou, whereas for the outer, light summer skins were preferred, except for midwinter sealing. Most outer trousers were decorated on the legs; some carried bands of coloured skin at the bottom similar to those on stockings (Figure 9); others, a wide edging of white fur, and two or three narrower bands above; others again, combined these two types of decoration, or displayed more palpable geometrical designs in white bands. Most of the outer trousers had a drawstring around the waist that issued at the back through two

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[1] For a photograph of a native wearing such a garment see Report of the Canadian Arctic Expedition, vol. XII, pt. A, fig. 68, p. 186.

[2] For a photograph see Report of the Canadian Arctic Expedition, vol. XII, pt. B, Plate VII (lower right).

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Figure 7. Man's sealskin "coloured". IV.D.[illegible]. 1/8.

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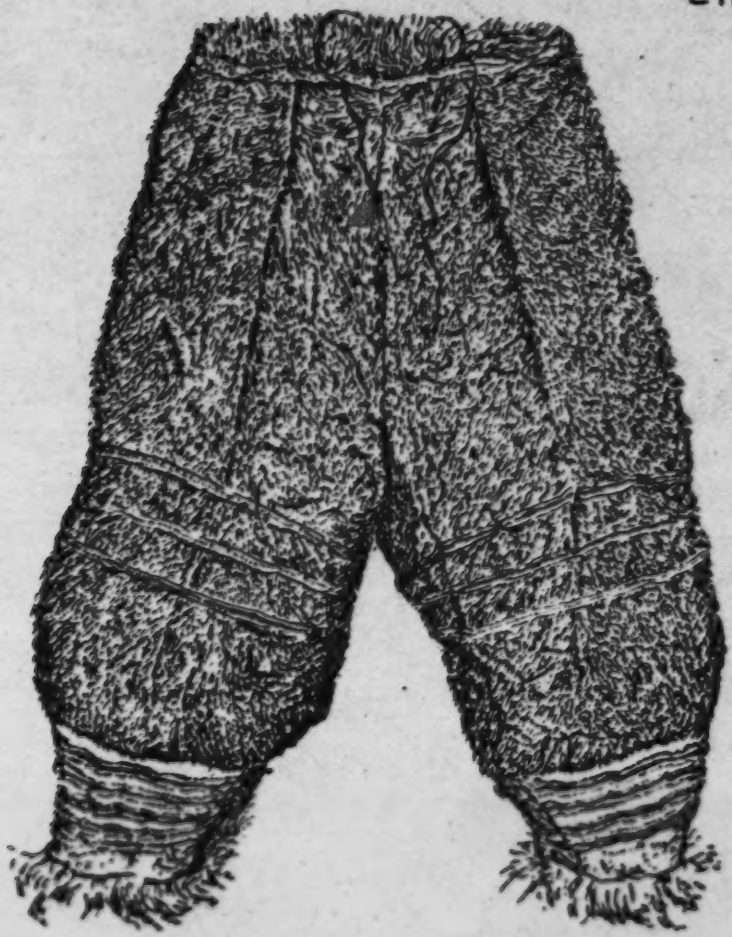

Figure 8. Man's outer trousers, over inner ones. IV.D.984. 1/8.

291 holes in the casing, and tied in front; a few were held up by a belt or cord of
294 sealskin, occasionally fitted, like the women's belt, wth a toggle on one end and a loop on the other. As there were no keepers for this belt, such men's outer

Figure 9. Man's outer trousers. IV.D.976. Approx 1/3.

trousers as lacked the drawstring had generally two caribou ears sewn on in front, one on each side, to prevent them from slipping down. The inner trousers carried no drawstring, but were less apt to slip down when worn alone, because the pressure of the belt on the hairless side caused the edge to fold over.

Sealskin Shoes. The creamy yellow shoes of dressed sealskin (*tuktukaluk*) that formed the outermost covering of the feet during the winter months, and were commonly worn around camp in the summer, contrasted pleasingly with the brown and white caribou fur in the rest of the costume. The Eskimo made their shoes on two patterns. One type, the easiest to make, was a plain shoe (*ukuviaqtak*) in which the whole upper part covering the instep was a separate piece attached to the sole by a seam around the edge of the foot. More decorative, and, therefore, always preferred for dances, was the second type (*tuatuatsiaq*), in which the sole was crimped over the toes and its edges joined to an inserted V-shaped "tongue", broad or narrow according to the fancy of the maker, and cut from brownish black, undressed sealskin that stood out prominently in its yellow setting. The two patterns are shown in Figure 10.

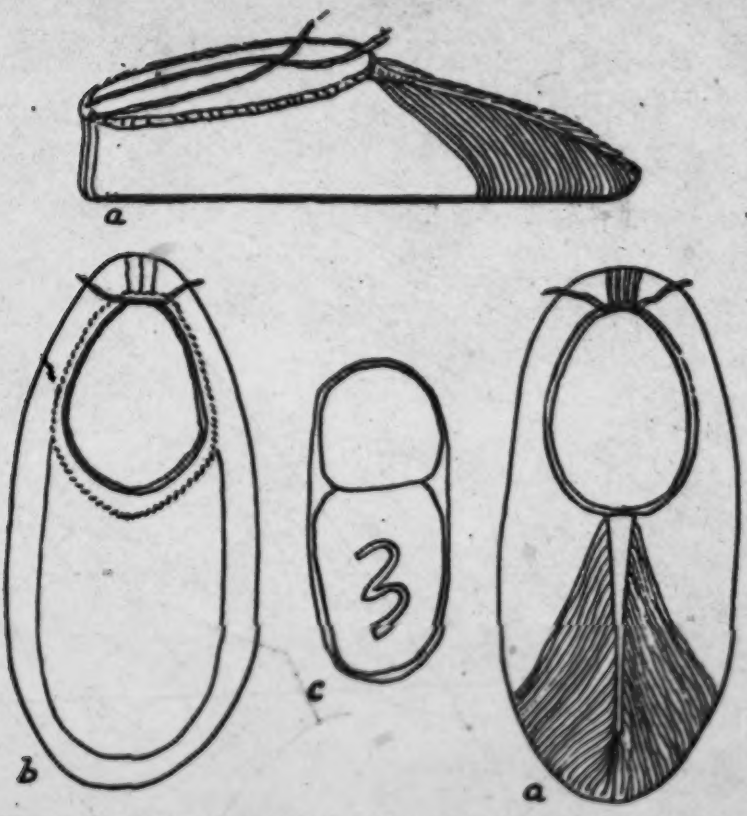

Figure 10. Sealskin shoes; *a*: crimped; *b*: plain; *c*: sole of *b* showing crimpers. IV.D.51, 1220.

In both types of shoes the sole was turned up over the heel, and either crimped (the tucks being threaded together with sinew knotted at both ends), or else slit, and, after the removal of one or more triangular sections, joined

29 together again. Heel crimping was naturally confined almost entirely to the more decorative shoes. When not crimped, this type usually had one seam up the middle of the heel, whereas the plainer type frequently had two and even three.

294 A casing of sealskin (more rarely, caribou skin), undressed, and sometimes 281 not even dehaired, was sewn round the top of the shoe to hold a cord of plaited 291 sinew (*singiq*) that emerged through two holes at the back and tied in a bow over the instep. Two large patches of sealskin, dehaired but undressed, covered the whole or almost the whole of the sole, giving it double thickness; and whenever a hole wore in either patch, another was promptly superimposed on it. These patches had to be sewn on with concealed stitches that caught only the under surface, because the thread would quickly fray and break if it penetrated [481] to the outside. Natives who anticipated considerable walking on glare ice or very hard, firmly packed snow sometimes added also narrow, meandering patches —"creepers"—to give them securer foothold (Figure 10c).

[114] In the autumn of 1915, when the party with which I was travelling was [122] still hunting inland, an Eskimo induced his wife to make him a pair of caribou- [177] fur overshoes and to reinforce them with extra soles of sealskin. From another native I obtained a similar pair of caribou-fur overshoes that bore outer soles of dehaired caribou skin, and, over the outer soles, patches of sealskin. These were probably copied from the shoes of the inland Eskimo to the southeast, where they were invariably made from caribou fur, as the Copper Eskimo well knew. Around Coronation Gulf they were regarded with disfavour for ordinary use, because, although warmer, they readily soaked up the damp from the half-thawing floor of the snow-hut and immediately shed their fur. They were more practicable among the inland Eskimo, whose snow-huts were not so warm, because, lacking seal oil, they burned caribou fat in their lamps, which served in the main for lighting only.

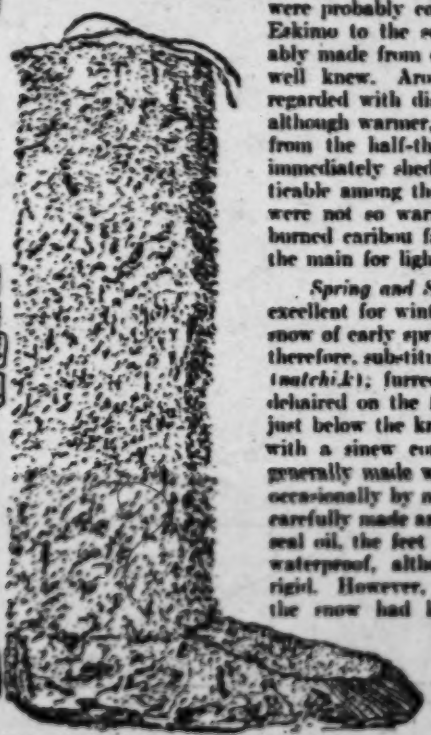

Figure 11. Man's spring boot. IV.D.1029. 1/4.

Spring and Summer Boots. Sealskin shoes were excellent for winter wear, but against the soft deep snow of early spring quite inadequate. The Eskimo, therefore, substituted for them long boots of sealskin (*natchik*), furred on the outside of the legs but dehaired on the feet (Figure 11). They reached to just below the knees, and were there tightly bound with a sinew cord that passed through a casing, generally made with an extra band of sealskin, but occasionally by merely sewing down the edge. When carefully made and saturated from time to time with seal oil, the feet of these boots were soft but quite waterproof, although the uppers were somewhat rigid. However, toward the end of spring, when the snow had largely melted, the streams were running, and pools of water lay everywhere, the Eskimo changed to their real waterboots (*iperautik*) (Figure 12), which were similar in shape, but dehaired throughout their entire

length.[1] They were tied, too, not around the top, but around the ankle, by means of a cord that threaded through two loops, one on the outside of the foot, the other on the inside.

Figure 12. Man's waterboot. IV.D.1625. 1/4.

In both types of boots the sole was commonly crimped up at heel and toe and sewn to an upper, V-shaped piece, exactly as in the better type of sealskin

[1] On the best of these boots the hair was not scraped off, but clipped as closely as possible with scissors, thus preserving the full thickness of the skin.

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shoe. In boots, however, this V-shaped piece was never narrow, as in many shoes, but covered most of the upper surface of the foot. The leg was sewn on last; besides the seam where it joined the foot, it bore a vertical seam up the front. The loops for the cord were an integral part of every waterboot, being carefully stitched in when the sole was sewn to its V-shaped upper. Grass insoles, [824] such as were worn in waterboots by more western natives, were not current among the Copper Eskimo, whose short socks of seal and caribou fur fulfilled the same purpose.

One saw occasionally a hybrid type of boot, which had the sealskin foot of a waterboot but a leg of caribou fur, usually, if not always, taken from an outer stocking that had worn out in the sole. Boots of this type, like the boots with legs of haired sealskin, functioned only in the early spring and late autumn; from the beginning of June until October waterboots prevailed at all times, except that the low sealskin shoes served as slippers around camp.

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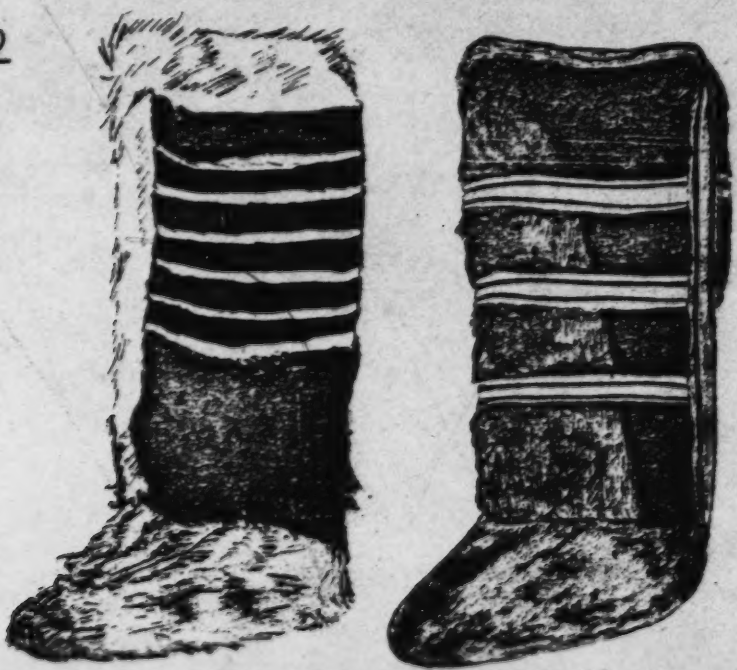

Figure 13. Man's outer stockings. IV.D.773, 784. Approx. 1/3.

296 Boot soles, like the soles of shoes, were naturally reinforced with patches that demanded repair or replacement every 2 or 3 days when travelling over stony ground. As soon as the hunter returned to camp each evening his wife turned his boots inside out to dry, and, if necessary, soaked in a pot of urine enough sealskin to patch them in the early morning. Hide from the bearded seal lasted three or four times as long as hide from the foetid seal, but the Eskimo seldom possessed enough of the material.

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Good waterboots, boots, that is to say, that would actually keep out the water, required very skilful sewing. If the thread gave out when making a seam the woman did not simply knot it and start afresh, but she carefully spliced a new thread into the end of the old; and she greased both the thread and the skin with blubber to prevent any tearing at the punctures. Men commonly [293] tested a new pair of waterboots by standing in water, and unmercifully scolded their wives if the result proved unsatisfactory.

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Figure 14. Man's outer stockings. IV.D.975, 772. Approx. 1/3.

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Outer Stockings. The Copper Eskimo never wore an outer pair of stockings (*mitqolik*) except with sealskin shoes, because they were a needless encumbrance under the spring and summer boots. Like the latter, they reached to just below the knees, where either a casing was added or their upper edges stitched down to hold the cord of sinew that fastened in front of the leg and kept them in place. The outer side of the stocking, of course, was always furred. We may distinguish four varieties. The first and commonest, called simply *mitqolik* (Figure 13), was made from caribou leg skins, in which the hair lies flat and smooth; the second, *kamakpak*, from the body coat of the caribou, in which the [292]

292 294 [192] hair is longer and stands out straighter, making the stocking seem very bulky. Fashion decreed that in this second variety there should be a streak of white fur down the inside of the leg. The third variety, also called, I believe, *kamakpak*, was made from less heavy body skin, and decorated at intervals with narrow bands of white fur that usually encircled the leg, but in some stockings ran vertically. This variety was quite popular, because it was serviceable for travelling, like the former two, and also acceptable in the dance house. [192] The real dancing stocking, which was rarely worn upon the trail, was the *kamakparyuk*, in which all or nearly all the leg was encircled by narrow parallel bands in three colours, white, red, and black or brownish black (Figure 14a). The white was given by close-clipped caribou fur or dressed sealskin, the black, by the natural colour of dehaired sealskin, darkened still more at times with galena, and the red, by dehaired sealskin stained with litharge.

Variations of these four types were not uncommon, for the Eskimo were quick to seize any new idea that presented itself. Thus, some stockings combined the characteristics of the third and fourth varieties; they were furred below the calf of the leg and decorated with one or more stripes of white-haired caribou skin, and above, they bore the parallel, coloured bands. Other stockings had two or three consecutive rows of coloured bands, usually black and white only, arranged at intervals down the furred legs. Illustrations of some of these variations are shown in Figures 13 and 14.

Figure 13. Man's inner stocking. IV.D.28. 1/2.

The feet of outer stockings were nearly always stitched from caribou leg skins, but the seams did not follow any definite pattern. One occasionally encountered feet made of haired sealskin, which were less warm than feet of caribou fur, but were not spoiled by the dampness that often penetrated through the sealskin overshoes from the soggy floor of the snow-hut.

291 294 [192] *Inner Stockings.* The inner stockings (*nlektik*) coincided in length with the outer but were nearly always made from the thick winter skin on the body of the caribou and worn with the fur inside. As they were normally invisible, and did not need to be attractive, they were often pieced together from sections of old coats, sleeping skins, and other articles. The seams, therefore, followed no definite patterns, except that one usually ran lengthwise down the middle of the sole, because this was the easiest way to shape the foot. They needed no cord around the top, being stiff enough to keep their shape even when they were not held up by the outer stockings or the boots (Figure 15).

Socks. Between the outer and inner stockings came the socks (*ilupeqquk*), worn with the fur on the outside. Generally they were made from the thick winter coat of the caribou (Figure 16), but sometimes from the thinner summer coat, and occasionally, especially in children's clothing, from other skins such as hare, marmot, and even loon. A few, for greater warmth, were of double

Figure 16. Man's caribou-fur socks. IV.D.767. 1/4.

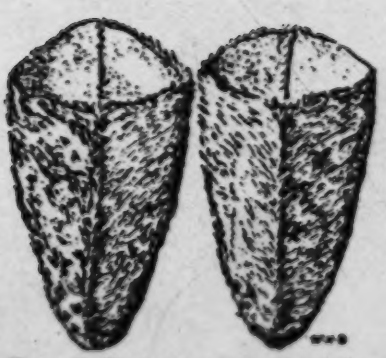

Figure 17. Man's outer socks, of seal fur. IV.D.762. 1/3.

Figure 18. Man's outer sock, of sealskin. IV.D.1238. 1/3.

thickness and presented fur on both the inside and outside. Each sock was commonly shaped from a single piece of skin, slit front and back, then seamed from toe to instep and up the heel; but there were numerous exceptions to this rule.

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Figure 19. Child's fawn-skin cap. IV.D.931. 1/4.

Caribou fur socks were worn in winter and summer alike, over the inner stocking. When the snow began to melt in the early spring, and both the outer stockings of caribou fur and the sealskin shoes gave place to sealskin boots, the Eskimo wore over these caribou fur socks other socks of sealskin (*pineqquk*), with the hair turned outside (Figure 17). Later in the season, again, when wandering inland over stony ground that was liable to blister the feet, they generally inserted socks of hairless sealskin (*kimitaituk*) between the other two (Figure 18). Both types of sealskin socks were made in exactly the same way as the caribou-fur ones.

Caps. Men very seldom wore caps, except the ceremonial caps for dances, but women used them occasionally, especially in summer when mosquitoes darkened the air, and children quite frequently at every season of the year. They were made generally from fawn or marmot fur, worn with the fur side outward; and in shape resembled a bonnet, often with lugs to protect the ears (Figure 19).

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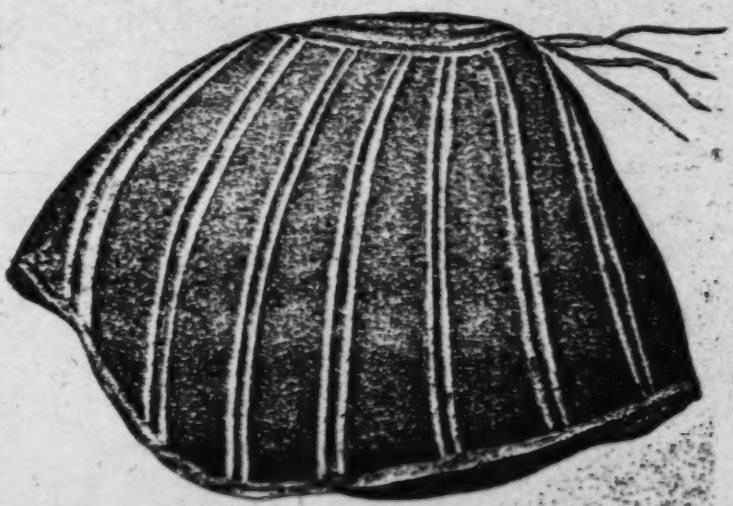

Figure 20. Dancing cap, of sealskin. IV.D.982. Approx. 1/2.

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Dancing caps were luxuries restricted to influential natives, who nevertheless lent them freely to kinsmen, so that in the course of an evening's entertainment the same cap might appear on half a dozen heads, both men's and women's.

women's. Figure 20 shows a rather unusual type of dancing cap, made entirely from sealskin. Most were of short-haired caribou fur, decorated with parallel white bands, or with bands in white, red, and black exactly like outer stockings; many lacked even the fur base, the parallel bands forming the entire body of the cap. Here and there were attached clusters of creamy caribou-skin thongs, and to the crown a white weasel skin that trailed down behind (Figure 21). Inset in most caps, too, from one side to the other over the peak, was the head and neck of a loon, so split that the bill projected upward. Figure 22 shows a typical specimen.

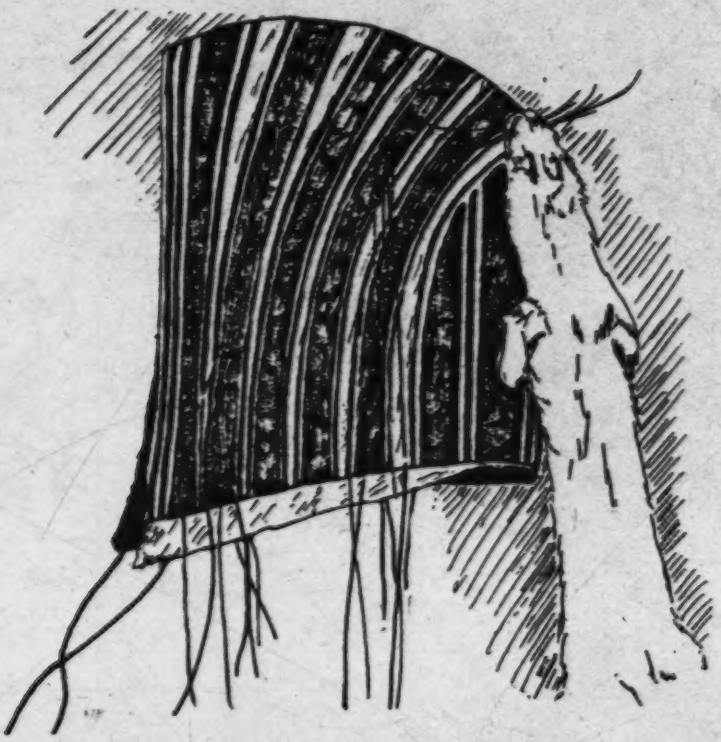

Figure 21. Dancing cap, of caribou fur, with lemming-skin pendant. IV.D.978. Approx. 1/2.

This loon-head ornament probably originated from the use of a complete loon-skin head-dress, such as was current on the Arctic coast of Alaska down to the second half of the nineteenth century.[1] I have never seen a specimen, but

[1] Cf. Simpson, John: The Western Esquimaux, a selection of papers on Arctic Geography and Ethnology reprinted and presented to the Arctic Expedition of 1875, p. 348, London, 1875.

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Figure 22. Dancing cap of caribou fur, with lemming-skin pendant and loon's bill. IV.D.977. Approx. 1/3.

I have never seen a specimen, but a native of that region told me that the skin was split down the middle of the back so that the long wing feathers would fall over the dancer's shoulders. The bill, after careful cleansing, was whitened with gypsum, and, whenever possible, one of the valuable blue beads that reached this area from Siberia was tied to the nostril of the upstanding bill. The dancer also planted a long wing feather on the front of his head, and one on each side. Only the skin of a yellow-billed loon (*Gavia stellata*) was acceptable for such a head-dress; any other skin would have excited ridicule.

Mittens. The ordinary mittens (*poalluk*) were very short, covering the hands but leaving so much of the wrists bare that, unless protected by long coat sleeves, they were often severely frost-bitten. Adults seemed very indifferent to this defect, though they sometimes finished off the edges with long-haired fringes of white fur that afforded some slight protection; but mothers often lengthened the mittens of their children.

Most of the mittens were single, with fur on the outside only, where it covered the whole surface (Figure 23*a*). A few were made double to carry fur on both sides (Figure 23*b*); others had fur all over the outside, except on the palm, where it was inside (Figure 23*c*); and a type that usually bore two or three ornamental bands of white fur around the wrist, or across the back of it, had no fur at all on the palm, inside or outside (Figure 23*d*). The last type was much in vogue for dances because it furnished a better grip on the heavy drum-handle, but whether it developed on this account is not known.

Most short mittens were made from the brown summer skins of the caribou, but some were also made from the heavier white winter skins. Naturally only those made from the brown summer skins carried the insertions of white fur. One occasionally saw mittens of polar bear skin or sealskin, which were stiffer and (the sealskin ones at least) not so warm as caribou-fur mittens, but, unlike the latter, did not shed their fur with dampness. They were particularly serviceable, therefore, for such tasks as icing the sled runners.

If we leave out of consideration the white insertions just mentioned, every mitten was cut out in three pieces. One piece gave the palm and half the thumb; a second, the front of the wrist and the back of the thumb; and the third formed the whole back of the mitten. The general pattern can be seen in Figure 24.

Besides his short, everyday mittens each man owned a pair of long ones (*atqatik*) for working with snow, and especially for building the snow-hut (Figure 25). It was made, preferably, from the leg skins of the caribou, on which the long hair lies smooth and flat; and it covered the sleeve of the coat to about the middle of the forearm, where a sinew drawstring that passed through a narrow band of dehaired skin, doubled back and sewn all round the upper edge, checked the penetration of the snow. Being solely a working mitten (whence it commonly received another name, *savaktotik*, i.e., "working garment") it carried no ornamentation and was furred on the outside only. Like the shorter mitten, it was cut out in three pieces.

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Figure 23. Mittens of caribou fur. IV.D.1914, 800, 1143, 1152. Approx. 1/4.

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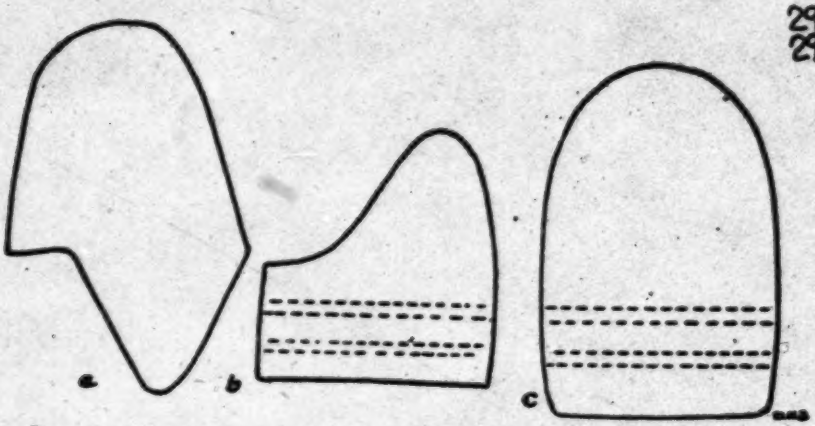

Figure 34. Mitten patterns; a: palm and part of thumb; b: part of thumb and wrist; c: back.

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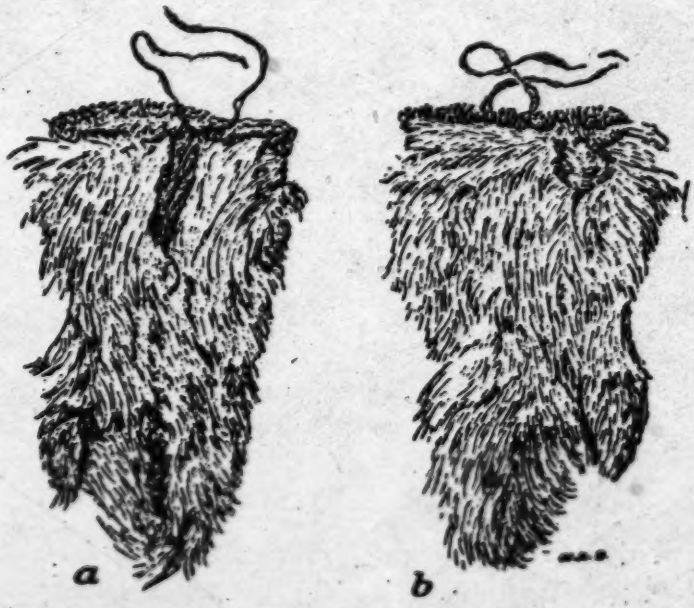

Figure 35. Man's long mittens, of caribou fur; a: front; b: back. IV.D.1020. 1/2.

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

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294 *Coats.* Women's coats differed appreciably from men's in two respects only; the shoulders were greatly enlarged and the hood magnified into a kind of bag. Both the outer and inner coats were cut on the same general pattern as men's outer coats except for the hood, which in the outer garment was built up of five pieces (excluding insertions and the white fringe around the face); in the inner, where the fur required no matching and carried no insertions, it was made on a simpler pattern (Figure 28). When enlarging the backs of the garments

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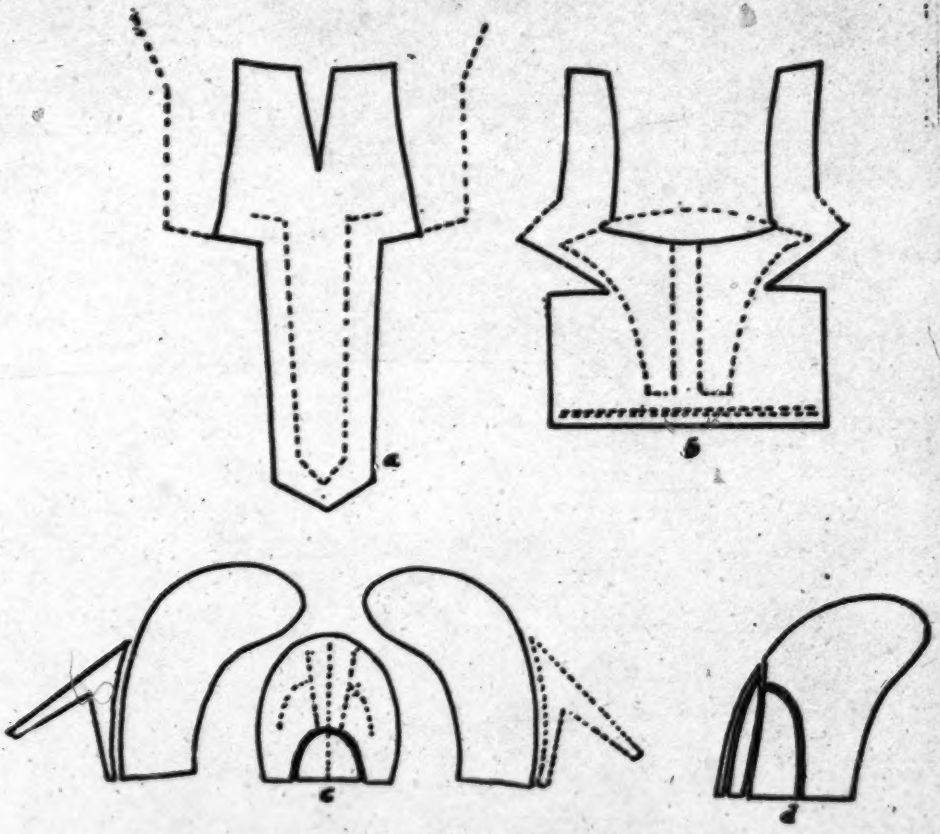

Figure 28. Patterns of women's coats: a: back; b: front and sides; c: hood of outer coat; d: hood of inner coat. Approx. 1/12.

to make room for a baby the V-shaped gusset between the shoulders was replaced by a fuller, more or less oblong one, and the neck-piece of the hood expanded to correspond; a cord tied around the hips, over the outer coat, kept the infant from slipping down.

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

Many women attached to the bottom of the outer coat, in the very middle of the front, a triangular piece of fur, brown, white, or brown with white insertions. With the white gusset in the front of the trousers, and the white or coloured edges of the outer stocking, this gave a series of more or less symmetrical triangles inside one another, all having the bottom edge of the coat for their bases (Figure 27). The same triangular appendage sometimes appeared on men's coats also, but much more rarely, because, standing isolated, it could not produce the same decorative effect.

Figure 27. Outline of the white insertions on the upper edges of women's outer stockings, on the front of the trousers, and on the bottom of the coat, showing the symmetrical V patterns, one inside the other.

As common, or almost as common as this triangular appendage was a long, narrow, rectangular one, fringed, like the bottom edge of the coat, with white fur. Here the dark line of appendage fur merely continued the dark line down the middle of the coat.[1]

The decoration of women's outer coats generally coincided with that on men's, except that white armbands encircled the forearms instead of the upper arms. A coat from Bathurst Inlet offered the most striking variation; down the middle of the front it carried the regular tattooing design, a Y flanked on each side by an I, produced by narrow bands of red-stained skin that were edged and dotted with running stitches of white skin in such a way as to give the impression of embroidery (Figure 28). One or two other women in the same district wore coats modelled after those in vogue among the inland Eskimo to the southeast; that is to say, they were of nearly equal length back and front, slit up the sides, edged with close-set fringes of dehaired caribou thongs, and provided with hoods about half as long again as those normally current among the Copper Eskimo.

[1] See Plate IX A, Reports of the Canadian Arctic Expedition, vol. XII, pt. A, p. 387.

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

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Figure 28. Front of woman's coat, decorated with a running stitch. IV.D.985. Approx. 1/8.

Trousers. Women, like men, wore two pairs of trousers (*saiikhak*) in winter, and only the inner pair in summer; but as their stocking covered more of the leg than the men's, their trousers were shorter and did not reach the knees.

The inner pair was rarely if ever decorated. The outer often had coloured stripes down the outside of each leg, and, in the middle of the front, a triangular gusset of white fur, with its two sides parallel to the white or coloured edges of the stockings. To enhance the symmetry of the arrangement these two sides also carried at times an edging of coloured bands (Figure 29).

So far as I know, women never used drawstrings on their trousers, but secured them with a sealskin thong fitted with loop and toggle.

Shoes, Socks, and Mittens. These were in no way different from those worn by men. Women, of course, did not possess the long working mittens that reached half-way up the forearm.

Waterboots. The woman's waterboot (Figure 30) had the shape of the stocking beneath it, which above the foot differed entirely from a man's boot or stocking. After fitting tightly around the ankle it expanded rapidly upward, attaining just above the knee a diameter of from 10 inches to over a foot. The outer side of the boot (or stocking) then tapered to form a wide strap that tucked over the belt holding up the trousers.

In the foot it did not differ from a man's boot. Like a man's, too, the leg had only one seam, straight up the middle; but in so large an expanse of skin there were generally two or three holes, from wounds and other causes, that required covering with round patches.

Outer Stockings. The waterboot replaced in summer the outer stocking (*ipiya.k*) of caribou fur, which bore the same peculiar shape as the boot, but was frequently decorated after the manner of the man's outer stocking. Commonly all the upper edge, from the inside of the knee to the top of the strap that tucked into the belt, was bordered with several parallel rows in red, white, and black (either the black or the red, but more commonly the red, might be omitted). From the strap to the foot, down the front of the leg, ran another broad band, similarly coloured, and a third, or else two or three rather narrow bands inserted an inch or two apart, extended half-way around the ankle or completely encircled it (*See* Figure 31). There were numerous modifications of this pattern, however, as in the patterns on men's stockings. For example, the coloured stripes varied greatly in number; they were often replaced by broad or narrow bands of white caribou fur; and the decoration down the front of the leg was frequently omitted (*See* Figure 32).

The feet of both outer and inner stockings were made preferably from caribou leg skins, but not infrequently from marmot fur. In spring some women replaced them with feet of haired sealskin. The rest of the garment was derived from the body fur of the caribou.

Inner Stockings. These corresponded in shape with the outer, and bore the same name, *ipiya.k*, but were almost invariably plain. In fact, I have seen only one decorated pair, a specimen that came from Prince Albert Sound. It bore the usual red, white, and black stripes, but they were inserted on the hairless, unattractive side, as the stocking was worn with the fur side in. Around the ankle was an additional design, the YII pattern that women tattooed on their arms and etched on their needle-cases, here produced by running stitches of very narrow sealskin (Figure 33). This design was very rare on garments, but occurred also on a woman's coat and on a pair of women's outer stockings that we bought in Coronation Gulf.

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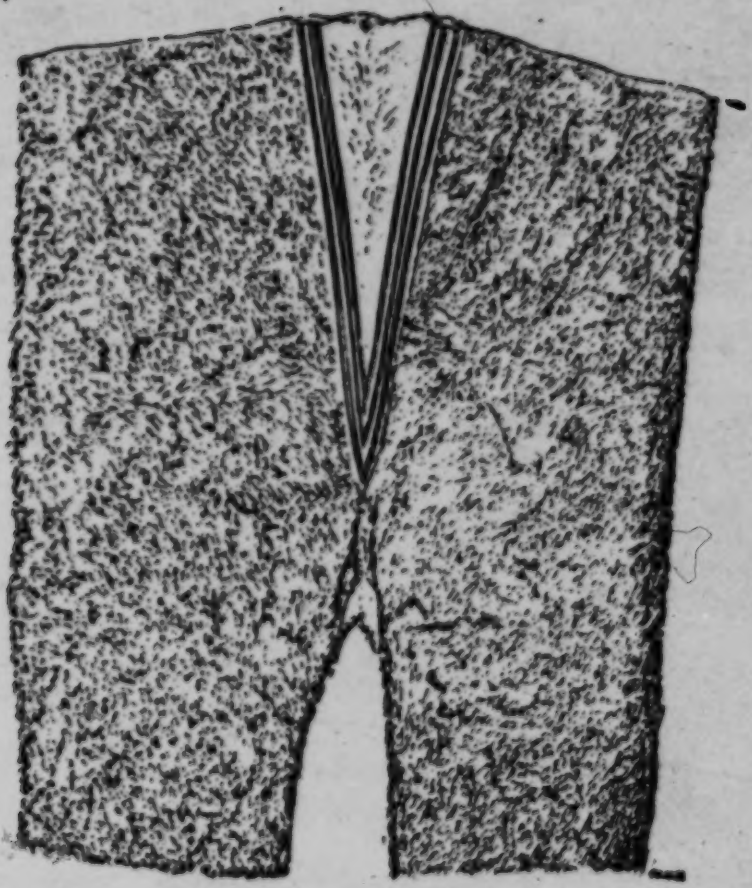

Figure 28. Woman's outer trousers. IV.D.788. 1/6.

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Figure 28. Woman's waterboot. IV.D.984. Approx. 1/2.

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Figure 31. Woman's outer stocking. IV.D.980. Approx. 1/6.

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Figure 32. Woman's outer stocking. IV.D.1041. Approx. 1/8.

28: Jenness E-5 (1914-1916) 1946
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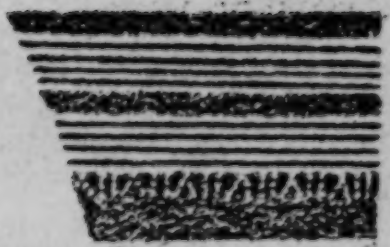

Figure 33. Insertions on the bottom of a woman's inner stocking. IV.D.1988

28: Jenness E-5 (1914-1916) 1946
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CHILDREN'S CLOTHING

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Within the snow-hut or tent a baby sprawled stark naked on bedskins, or wore only a caribou-fur diaper, covered at times with a second diaper of either caribou skin or sealskin that fastened around the waist with a cord. Without other protection than this the mother carried it on the trail under the fur coat. In very cold weather, however, she generally added warm mittens and socks of any available fur, caribou, marmot, or hare; often, too, a square of fur on the back fastened by two cords, one around the neck and the other around the waist. The baby's front, of course, needed no covering, as it rested directly against the mother's bare back.

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As soon as the child was old enough to stand on its feet it received a proper suit of clothing, generally made at first in one piece (Figure 34). The front, as in European combinations, was slit down the middle and laced across; another slit passed between the legs. Each mitten was sewn half-way around the edge of the sleeve, leaving a gap through which the hand could protrude; and there was a hood that pulled up over the head. Sealskin shoes completed the costume, which was naturally doubled in cold weather and augmented by separate outer stockings. Occasionally, a cap was substituted for the usual hood, and a few suits had the slit, not in front, but at the back. Although the usual material was caribou fur, marmot fur was nearly as common in districts where marmots were plentiful, because it did not spoil so readily with dampness.

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At the age of about 5 or 6 the child again changed its costume. It now wore a separate coat shaped like its parent's, but often lacking the long tail; combination trousers and stockings held up either by a belt or by a strap over one shoulder; outer stockings reaching to just below the knees; and sealskin shoes. Some of these combination trousers and stockings fitted very tightly, others were broad and flowing. The clothing of a girl at this time was indistinguishable from that of a boy, except that her coat often had the wide shoulders that characterised her mother's coat. Some girls retained this child's costume up to the time of their marriage,[1] but most boys and girls adopted full adult clothing as they approached adolescence. It was quite common for a child to wear an inner suit, all in one piece, beneath an outer suit in which the coat and trousers were separate.

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There was seldom any decoration on the outer suit made all in one piece, and such as did occur seemed to consist merely of narrow white bands of caribou fur around the sleeves and possibly elsewhere. Boys' and girls' combination outer trousers and stockings occasionally showed similar white bands. From Coronation Gulf I obtained a girl's combination outer trousers and stockings that had borne two parallel stripes of white fur around each leg just above the ankle. When the fur became worn, however, and the costume shabby, it had been reversed to serve as inner combinations, and decorated down the front of the legs and around the ankles, on the now outer, hairless side, with narrow bands of black and white sealskin similar to those on women's outer stockings (Figure 35). No other inner combination suit, to my knowledge, bore any decoration; this one seemed as unique of its kind as the woman's inner stockings illustrated in Figure 33.

[1] For a photograph showing a marriageable girl in this costume *see* Report of the Canadian Arctic Expedition, vol. XII, pt. A, Pl. VIII (p. 360 top right).

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Figure 34. Child's combination suit. IV.D.178. Approx. 1/2.

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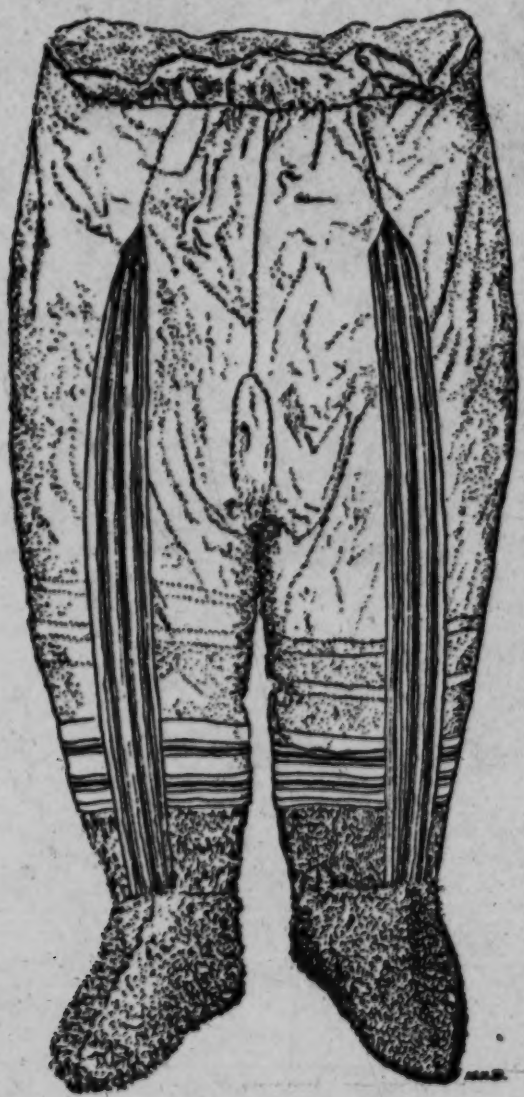

Figure 28. Girls' combination trousers and stockings. IV.D.998. Approx. 1/5.

ADVANTAGES AND DISADVANTAGES OF COPPER ESKIMO CLOTHING

291 [296] Some of the disadvantages of Copper Eskimo clothing have been mentioned already. The caribou fur shed its hair with dampness, and the shoes and boots soled with the skin of the common seal quickly wore out on stony ground and required almost daily patching during the summer months. The swarming mosquitoes of midsummer frequently assailed the only half-covered knees and wrists; the high-waisted coat hardly checked the winter gales from chilling the stomach; and the rather scanty hood could not shield the forehead and cheeks from frostbite. Despite these defects the costume of the men was extraordinarily well adapted to the climatic conditions, and capable of very little improvement with the meagre resources at their command. It was both lighter and warmer than woollen clothing of proportionate bulk, and at the same time much healthier, because it allowed the air to circulate freely under the trousers and coat. The four-layered footgear was eminently practical, being much easier to dry over a blubber-burning lamp than the thick-furred two-layered footgear, fitting tightly around the legs of long breeches, which has long been fashionable among the Eskimo of the Mackenzie River delta and northern Alaska. The women's costume, however, was much less satisfactory. The wide shoulders and enormous hood were wholly unnecessary, and the latter both heavy and cumbersome. Worse still were the ridiculous stockings, which hardly protected the legs even in mild weather, and in blizzards frequently filled with snow. More than one woman had lost her toes by wearing them, and many had incurred severe frostbites.

296 The Copper Eskimo took great care of their clothing, as was only natural, seeing that skins were never too plentiful and the labour of dressing them, cutting them out, and sewing them together was considerable. The first thought of every native on entering a snow-hut was to beat the loose snow from his clothing with the stick that each household provided for that purpose. Spare clothes were packed away in large seal- or caribou-hide bags, which were stored in winter either in a cavity under the sleeping platform or on the roof of the snow-hut beyond reach of the dogs; in summer they were deposited on high caches under other possessions, or buried beneath mounds of stones. Strips of white fur from the belly of the caribou received special attention on account of their value for insertions, and the women carefully cleansed them of all dirt and blood-stains with soft snow. [294] [281]

ADORNMENT

301 237 *Ornaments and Charms Attached to Clothing.* Men's coats often trailed on the back white lemming skins, arranged with the usual regard for symmetry. There were generally three skins, one attached to the back of each shoulder and the third spaced half-way between them at a somewhat lower level (*See* Figure 36); rarely there were five, arranged in the same fashion, but, of course, closer together, and forming a slightly curved line parallel with the lines at the neck and waist. A native who owned only one lemming skin generally sewed it midway between the shoulders, but at times suspended it from a button in the small of the back. This button, made of bone, musk-ox horn, or, rarely, the boiled albumen of a bird's egg (Figure 37), appeared quite frequently on the everyday outer coat, and was an integral part of the heavy winter coat used in sealing, where it served to attach both the hunter's foot-pad of polar bear or caribou fur and the bone pins with which he closed the wounds in his seals. Men seldom affected other ornaments, but one Prince Albert Sound Eskimo wore a bandolier of musk-ox fur, and another a bandolier of polar-bear claws suspended from a strap of caribou hide (Figure 38).

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Figure 28. Lemming-skin pendant on the back of man's coat. IV.D.267. Approx. 1/6.

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Figure 37. Buttons for the backs of men's coats; a: of boiled albumen, IV.D.[illegible], 1/1; b: of bone, IV.D.[illegible], 2/1.

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Figure 38. Caribou-fur bandelier with claw pendants. IV.D.[illegible]. 1/3.

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Women occasionally strung a row of small bones (Figure 39) or of caribou incisor teeth across the fronts of their coats, but other appendages to their clothing were not so much ornaments as charms. Every mother who carried a baby sewed to her coat some object that she conceived would make the child a skilful hunter or an efficient housewife when it grew up; and she transferred it to the child's clothing as soon as it was old enough to run about. The commonest of these charms were small bones or pieces of fur from a caribou or seal that had been killed by a near relative, e.g., an uncle or a grandfather. Thus, the combination coat and trousers of one little boy carried a string of caribou fur on the chest and another on the back of the left shoulder. Another child wore on his belt a strip of fur from the forehead of a caribou; to the coat-shoulder of a third were sewn three or four feathers from the tail of a redpoll; and a fourth dangled a tern's bill from his back.

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Figure 39. Chain of fox bones from the front of woman's coat. IV.D.371. 1/2.

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The bone (rarely wood) belt toggle might perhaps be regarded as an ornament, because though generally invisible, it was often decorated with incised lines (Figure 40). A very small toggle on one child's belt (Figure 41) was perforated from side to side, and so closely resembled the toggles attached to needle-cases that it may have been diverted from its original purpose.

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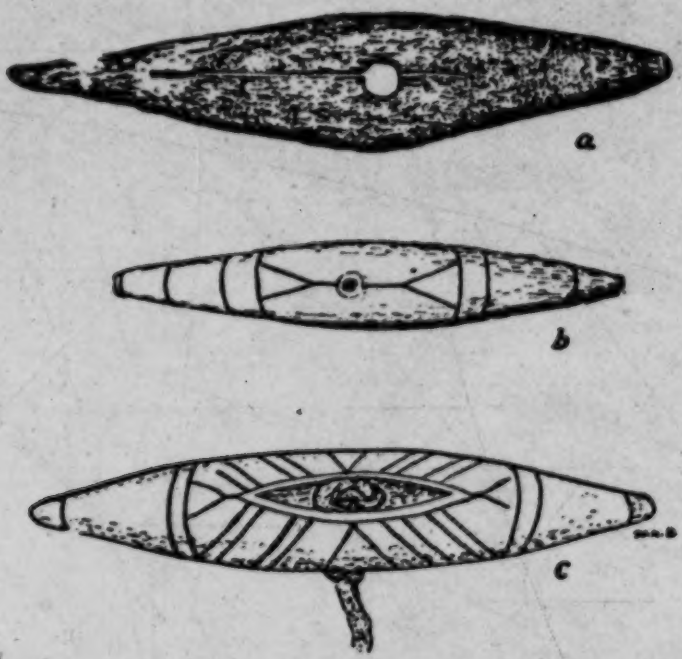

Figure 40. Women's belt toggles. IV.D.1372, 544. 1/1.

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For a time I fancied that belt toggles could be distinguished from the toggles used for hauling seals (Figure 150) by the direction of the line-hole, but my collection of both kinds showed that any such distinction was illusory; in both, the hole was drilled indifferently from top to bottom or from side to side. It is probable, indeed, that many a toggle that served for hauling seals during the winter months became a belt toggle when the sealing season ended. At all events, I know of no criterion for separating the two except that if a toggle is of wood, or if its hole is of very small diameter, it probably terminated a belt strap and was not used for sealing.

Figure 41. Trouble from child's belt. IV.D.212. 1/1.

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Combs and Snow Goggles. Though not strictly ornaments, these may conveniently find a place under that heading. Combs were not very highly regarded by the Copper Eskimo. Many women employed their fingers instead, and those who did possess combs used them only rarely. All that I saw were made of bone, and seldom exceeded 4 inches in length.

bone, and seldom exceeded 4 inches in length. The teeth, which generally numbered from five to seven, were cut with the man's grooving tool, and a hole was nearly always drilled in the upper end for attaching the article to the needle-case. Most combs were simply cut off in a blunt point at the top, and though at times this shape was slightly modified, there was never any attempt at ornamental carving. Even the surface was rarely etched, and then only with two or three straight lines or with the ring-and-dot pattern. Typical specimens are shown in Figure 42.

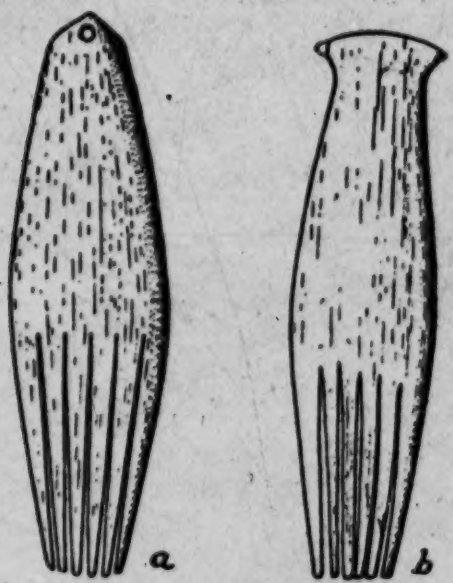

Figure 42. Women's combs. IV.D.1683, 805. 1/1.

Snow goggles (Figure 43), made of wood or antler, had the shape usual among all Eskimos. Projecting brow-pieces to intercept light from above were not uncommon. The cord was of sinew or sealskin. The slits were of even width, rarely widened at the inner end as in many goggles from Hudson Bay. Ornamentation was absent.[1]

Tattooing. The appearance of the women was greatly affected by tattooing. Only two men were seen with tattoo marks, which in both cases consisted of two short lines across the bridge of the nose. The marks on one man, a native from Coppermine River, had no significance that I could discover. He stated himself that they were due to an arbitrary whim, but I strongly suspect that

[1] See Plate VI in Report of the Canadian Arctic Expedition, vol. XII, pt. B, p. 76B.

304 755 there was a magical reason at the back of it and that they were made to cure some ailment. The other man was Ilatsiak, a shaman of Bathurst Inlet.[1] He asserted that a woman made the tattoo marks on his nose as he lay dead, in order to bring him back to life; that is to say, they were made in the course of a religious séance.

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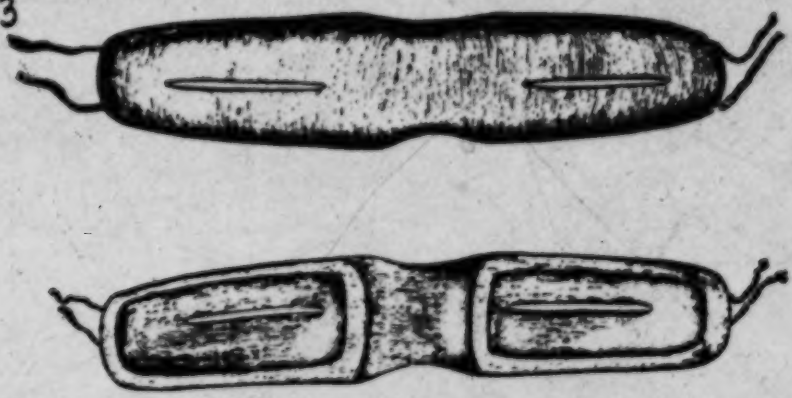

Figure 43. Snow goggles. IV.D.806. Approx. 1/1.

304 Tattooing on women had no religious significance; it was merely a time-honoured method of adornment to which every member of the sex submitted willingly. Face, hands, and arms were marked with certain stereotyped patterns, which were only slightly modified according to the whim of the individual. Usually the process was commenced a year or so before marriage and completed a year or two afterwards; but occasionally one encountered a young married woman with almost no tattooing, and a still younger maiden completely tattooed.

Figure 44. Women's face tattooing.

Just as there were no fixed rules regarding the exact time for the process, so there were no definite ceremonies surrounding it; the girl often made some of the lines herself on her hands and wrists, but generally they were made by a

[1] For an account of this man see "The Life of the Copper Eskimos", p. 98, vol. XII, Report of Canadian Arctic Expedition.

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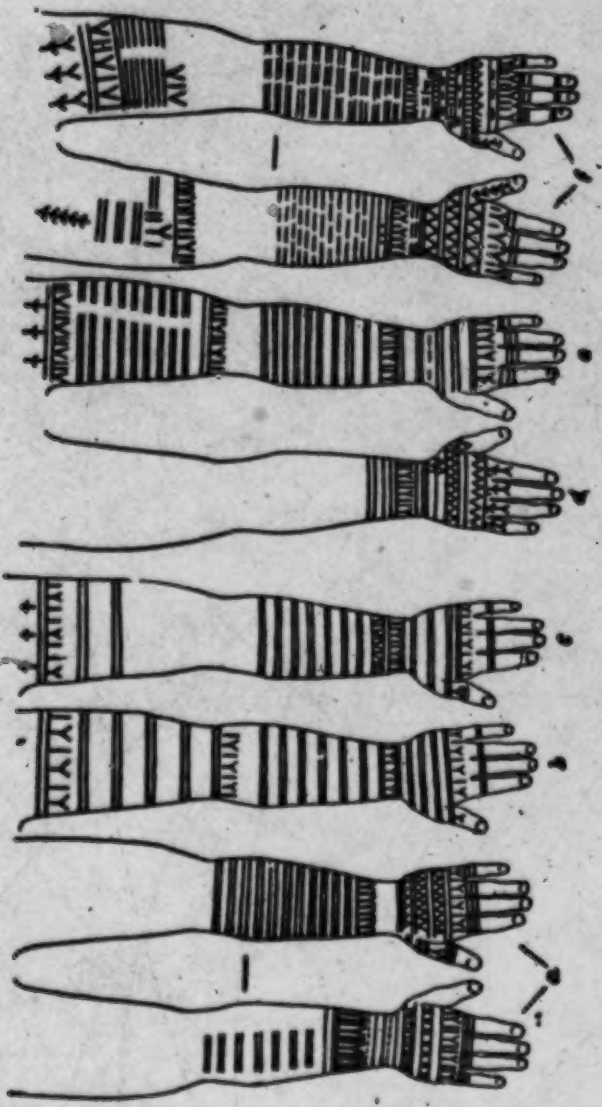

Figure 45. Arm and hand tattooing.

304 female friend or relative. There seemed to be no compulsion in the matter
[626] beyond public opinion and a woman's natural desire to follow the current methods of adornment. A young married woman in the Tree River group refused to allow her face to be tattooed at all on the ground that the process was too
[832] painful; but as she was only 17 years of age her aversion may have been overcome later. The average girl was rather eager to be tattooed in order to increase her charms.

The Copper Eskimo employed the process usual among other Eskimo tribes; they passed under the skin a copper sewing needle threaded with sinew dipped in lampblack. For dots, however, and sometimes also for lines, they did not thread the needle (but inserted into the puncture a sharp wooden stick dipped in lampblack. Only a few marks could be made at one time because the operation was very painful. Most girls began on the backs of the hands and on the forehead.

304 The designs consisted of series of parallel lines, zigzag and spur bands. On
531 the face the usual marks were double V's in the middle of the forehead, two or three connected "spurs" running from the corner of each eye, two parallel lines across each cheek, and five lines radiating from the lower lip to the chin (*See*
[177] Figure 44). Three parallel lines on each cheek instead of two, and from six to ten lines on the chin were seen on several women, nearly all of whom came from the eastern end of Coronation Gulf; doubtless, these unusual numbers were due to the influence of the Netsilik Eskimo farther east. On the arms the marks were usually confined to the outer surface (Figure 45); they seldom extended
[755] above the elbow, or completely around the lower arm. Tattooing of the legs, after the manner of the eastern natives, was not practised, although a woman in Dolphin and Union Strait was said to have tattooed two small lines on her thigh to remove a painful swelling. A Prince Albert Sound woman had a short line tattooed on her left breast, for what reason I did not discover.

302 We neither saw nor heard of any painting of the face or body other than a few streaks made in jest with a piece of charcoal.

CHAPTER III

HOUSEHOLD FURNITURE

FIRE-MAKING

372 The Copper Eskimo were familiar with the method of making fire by means of the thong drill, but rarely practised it because it involved strenuous labour and suitable wood was rare. The handles of some of their whittling knives and other tools had small holes to fit the top of the spindle, for a man pressing down with both hands could exert greater force than was obtainable with the usual drill mouthpiece. Figure 46 shows the hearth of an old fire-making apparatus; the specimen was discovered on the beach at Kater Point, close to Bathurst Inlet.

372 316 The ordinary method of making fire was by striking together two pieces of iron pyrites, for which there were several sources around Coronation Gulf, the two best known being Kugaluk River, which flows down from the Colville Hills in southwest Victoria Island into the sea behind Cape Kendall, and a small river a few miles east of Coppermine River. The pyrites was occasionally covered with sealskin or caribou skin to protect the hand.

372 239 415 824 The spark was caught in willow catkins contained in a small disk-shaped bag of sealskin closed with a circular lid of the same material (Figure 47). A little blowing soon spread the glow over a large surface so that it could ignite a lamp-stick or a bunch of matted moss roots dipped in blubber. To foment a flame, however, most Eskimo kept a little stock of dry grass, which, like the lamp-wick of eriophorum seed, they carried in small bags made from the lining around the heart of some animal (Figure 48), from the skin on a loon's foot (Figure 49), or from caribou or marmot fur.

Figure 46. Wooden hearth of fire drill. IV.D.219. 2/3.

LAMPS

354 Many writers have stressed the fundamental importance of the Eskimo blubber lamp, without which the natives could not have survived along the northern coast-line. Although in certain regions they have now adopted substitutes such as stearin candles, coal-oil lamps, wood stoves, and primus stoves, throughout large parts of the Arctic the blubber lamp still holds its own.

Porsild[1] states that "In Arctic regions proper, train-oil is the only fuel, and there the lamps are large; where other fuel —heather, wood, peat or coal—is available, either the whole year round or only in the summer, the lamp used for burning blubber oil loses its importance as a heater, and is used

[1] Porsild, Morten P.: The Material Culture of the Eskimo in West Greenland; Meddelelser om Grønland, vol. LI, p. 246.

354 [511] [191] solely for illuminating purposes. For this, small specimens may suffice. But a surplus of light and heat is inevitably connected with the Eskimo idea of luxury; therefore big lamps are also found in such regions. Conversely, small and rudely made lamps for burning blubber oil are found also in the regions of the Far North.

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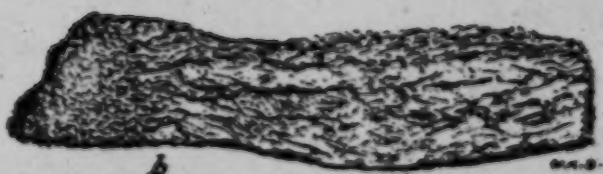

b

Figure 67. Fire-lighting apparatus: a: sealskin tinder-bag containing eriophorum seeds, IV.D.723, 1/1; b: moss-root torch, IV.D.227, 1/2.

354 191 The reason for this may either be lack of material, or these lamps may be intended for some particular purpose—for use on journeys or for illuminating the entrance or corners inside the house."

Hough again, in his well-known memoir,[1] distinguishes three kinds of Eskimo lamps on the basis of their use, viz. the house lamp, the travelling or summer lamp, and the mortuary lamp, the latter frequently being models.

Figure 48. Bag for dry grass, made from the lining around an animal's heart. IV.D.225. 1/1.

Neither of these statements is quite correct when applied to the Copper Eskimo. They had lamps of every size, from 2 or 3 inches long up to 50 inches; and small vessels 8 or 12 inches long were as common as lamps of 20 inches. From June to September or October, when most of the snow had melted from the land and the families were scattered in search of fish and caribou, the natives generally cached their lamps with the sleds on the seashore or on the margins of lakes, and used for fuel dwarf willow, heather, *Dryas integrifolia*, and other plants, instead of blubber. Consequently, they had no special summer lamp. But because their ordinary lamp seldom functioned during the summer months we cannot say with Pornild that it had lost its importance as a heater. It still remained the indispensable prerequisite of existence during two-thirds of the year for heat as well as for light.

[1] Hough, Walter: Ann. Rept. Smith. Inst., U.S. Nat. Mus., 1898, p. 996.

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[435]
[135]

Lamps only 2 or 3 inches long were children's toys, often made by themselves while their parents were manufacturing larger vessels. The Copper Eskimo placed on the graves of females these minature lamps, or else genuine vessels of small size, simply because they valued their larger lamps too highly to throw them away, and believed that the dead person could enlarge a miniature to suit its needs. Frequently, perhaps generally, they recovered useful lamps that had been deposited on the graves of relatives a few years earlier. Very rarely did they make a lamp, even a miniature one, for mortuary purposes only; and when they did, it was nearly always a wooden model, because soapstone was procurable only in one or two districts.

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Figure 49. Bag for grass or eriophorum seeds, made from loon's foot. IV.D.324. 1/1.

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Most of the cooking was done on lamps not less than 24 inches long. Lamps smaller than this, even down to 5 and 6 inches, served for short journeys, but were not intended primarily for that purpose any more than to be deposited on graves. Rather they were used to dry extra clothes, to give additional light for sewing or working, or to enable a little girl to play at housekeeping in a corner of the hut. Two small lamps laid side by side sometimes took the place of one large lamp for cooking. When these smaller specimens were made of soapstone the shapes were the same, and the workmanship as careful, as in the larger ones. Frequently, however, a family was content to use a water-worn pebble with a saucer-shaped depression, or a naturally hollow slab of limestone or dolomite.

[324]
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If we exclude the makeshift lamps last mentioned there was really only one kind among the Copper Eskimo, the regular house lamp, of which the smaller specimens, when not mere toys, were generally used for light alone, the larger for both light and heat. Nearly all were made of talc chlorite schist, a soapstone that is soft, of even texture, easily worked with stone or copper tools, and not liable to crack and break under the low heat of the burning blubber.[1]

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[1] In their spring tents the Eskimo sometimes rested the lamp directly on two snow blocks and kept them lighted for a considerable time without other effect than the gradual melting of the snow.

I know of only one source for this material that is used at the present time by the Copper Eskimo, Port Epworth at the mouth of Tree River in Coronation Gulf where the talc chlorite schist occurs as an inclusion in the granite. It is very coarse in texture, and of a pale grey colour, as can be seen in unused specimens or by fracturing an old one.

Nevertheless, there seem once to have been other sources. An old woman who lived at the east end of Coronation Gulf told me that long ago her people used to make lamps and pots from stone obtained in a quarry on Rae River. An early explorer, John Rae, did find soapstone at the fall 10 miles from the mouth of this river,[1] but only in thin beds, which might explain why the Eskimo ceased to use this source. Then again, I purchased from a Coronation Gulf native a little toy lamp of typical Copper Eskimo shape (Figure 50), which was certainly not made from the Port Epworth soapstone, for it is much finer in texture and of a pale green colour. In the same region I obtained also an unfinished implement, resembling an imitation lance-head, which was made from a very similar soapstone, but is yellowish green. Finally, from the west coast of Hudson Bay, probably from Chesterfield Inlet, the museum has a toy lamp (IV.C.165) that resembles in colour, texture, and graining the green toy lamp bought in Coronation Gulf; in shape and dimensions the two are practically identical except that the Hudson Bay specimen has no shelf. Morley E. Wilson, of the Geological Survey, Canada, expressed the opinion that these lamps almost certainly came from the same quarry, because this type of soapstone is exceedingly rare in Canada, and that the implement like a lance-head was also derived from the same locality. It is worth noting that there are deposits of soapstone near the mouth of Back River.

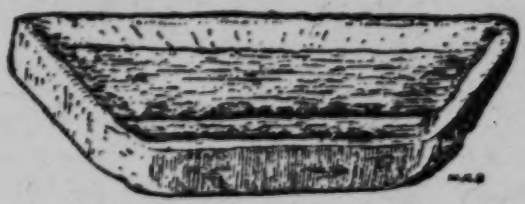

Figure 50. Toy lamp, of pale green soapstone. IV.D.613. 1/1.

Up to a few years ago natives from Dolphin and Union Strait in the west to Amundsen Gulf in the east often migrated to the Port Epworth quarry in the spring of the year in order to manufacture their own lamps and pots. Each family usually made more vessels than it required for its own use in order to have some for barter when it returned home the following autumn or winter.

Women and children often fashioned the smaller lamps and pots. The larger ones were the work of the men, although once they were finished and handed over to the housewife they became her exclusive property. No special skill was required; children 10 years of age could make small lamps just as good as those made by their elders. A little more care was necessary in working at a pot, because the rock, though soft, was somewhat brittle, and the walls and bottom had to be comparatively thin; but even this was not beyond the ability of a child, as it required patience rather than technical skill. With his crude copper tools a native could quarry out his block and make the largest lamp that was ever used in about 3 days, and the largest pot in no more than a day longer; iron tools, of course, appreciably lessened the time. First, he chiselled

[1] Richardson, Sir John: Journal of a Boat Voyage through Rupert's Land, vol. I, p. 312. London, 1851

324 clear of the solid rock a block equal to the length of the desired lamp or pot,
316 then gradually hewed it into shape and smoothed it all over by rubbing it with
412 any kind of hard, smooth stone. Formerly the copper-bladed ice chisel served
461 for quarrying the block, and the copper-headed adze for shaping it, but in more
354 recent times the Eskimo have used hatchets, geological hammers, and chisels with iron blades.

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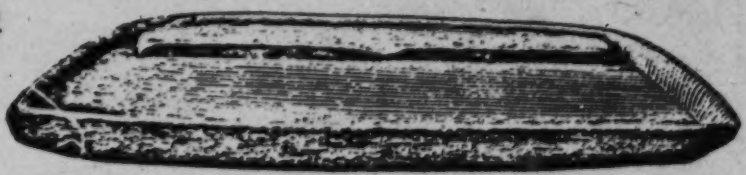

Figure 51. Typical Copper Eskimo lamp. IV.D.657. Approx. 1/8.

The typical Copper Eskimo lamp resembled in shape the lesser segment of a circle in which a large part of the arc was flattened until it was roughly parallel with the sector, whereas the sector itself was very slightly convex. Figure 51 illustrates this general shape. The convexity of the sector was occasionally very marked; and, conversely, the arc was sometimes hardly flattened at all, so that in a few specimens the shape approached an ellipse. The lamp outlined in Figure 52 shows a marked tendency in this direction.

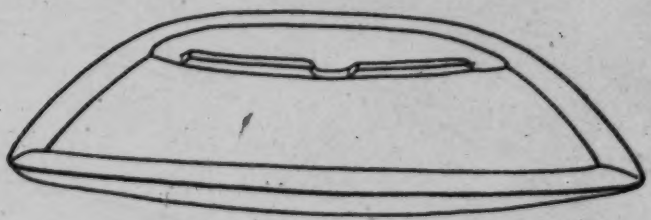

Figure 52. A nearly elliptical lamp. IV.D.651. Approx. 1/8.

The bottom of the lamp was invariably flat. The edges, which were perpendicular, or almost so, on the outside, ranged in thickness from 1½ inches to 3½ inches, and formed a narrow, well-defined rim around the oil well, which comprised the whole body of the lamp hollowed out to a depth of from 1 inch to 1¼ inches. The front edge, or lip, sloped down to the well at an angle of around 45 degrees, but elsewhere the edges were practically as perpendicular inside as outside. The well of the lamp was flat like the bottom, not rounded like a saucer. Most lamps were divided into two compartments by a raised ridge parallel to the front and back edges, but very much nearer the back; and the level of the back compartment was nearly always above that of the front, or well proper, thus forming a kind of shelf from which the oil could flow forward through two gaps at the extremities of the dividing ridge, and, in most of the

larger lamps, through a third, V-shaped gap in its middle. Many small lamps, however, and a few of the larger ones, were not divided into compartments (Figure 53); others had only a very narrow shelf along the back[1] (Figure 54). 354

Figure 53. Lamp without shelf or division. IV.D.139b. 1/1.

The largest lamp of which I have any record, 53½ inches long, was purchased by Capt. J. Bernard in Coronation Gulf. Other large lamps that I measured in the snow-houses of this region had the following dimensions:

Maximum length	Maximum breadth	Thickness at rim	Breadth of shelf
Inches	Inches	Inches	Inches
41	10	2½	3½
43	10	3	2
46	9	2½	1½
48	8½	3½	2½
50	9	3½	2½
53½	11½	3½	3

These six lamps had the same general shape; in each the shelf extended along the entire back and communicated with the well through three gaps in the dividing ridge, one at each end and one in the middle. A similar lamp (IV.D.643) brought back from the same region is 37 inches long, but has only two gaps in the dividing ridge, one at each end.

Figure 54. Lamp with very narrow shelf. IV.D.664. Approx. 1/2.

Ninety per cent of the lamps in use among the Copper Eskimo were of the general type described above, viz., rather shallow, flat-bottomed vessels with nearly perpendicular sides, a wick edge almost straight that sloped down at about half a right angle to the well, and a back edge either straight or slightly convex; the bottom of the well was flat, not saucer-shaped, and sometimes divided into two compartments. No other Eskimo group seems to have used

[1] It seems not unlikely that this ridge is a survival of an earlier wick-edge within the lamp, similar to those on Aleutian pottery lamps.

No other Eskimo group seems to have used lamps of this type unless derived by them in trade from the Copper Eskimo, for their convenient shape and large size caused them to command an extensive market. Not only were they bartered from group to group throughout the Coronation Gulf area, but they were traded along the coast to the Netchilik Eskimo of King William Island, and westward beyond the natives of Mackenzie delta to Barrow.[1]

Their value naturally increased according to their distance from the source of supply. Thus, on the west coast of Victoria Island, when the small 12-inch lamp (Figure 55) fell and shattered its back rim, its owner, or more probably her husband, did not discard it, as she would probably have done in Coronation Gulf, but made an entirely new back piece of wood, which she lashed through three holes with cords of sealskin or plaited sinew.[2] The larger lamps, of course, were mended everywhere, sometimes with another piece of soapstone, more usually with wood, which was cemented with seal blood and secured with lashings.

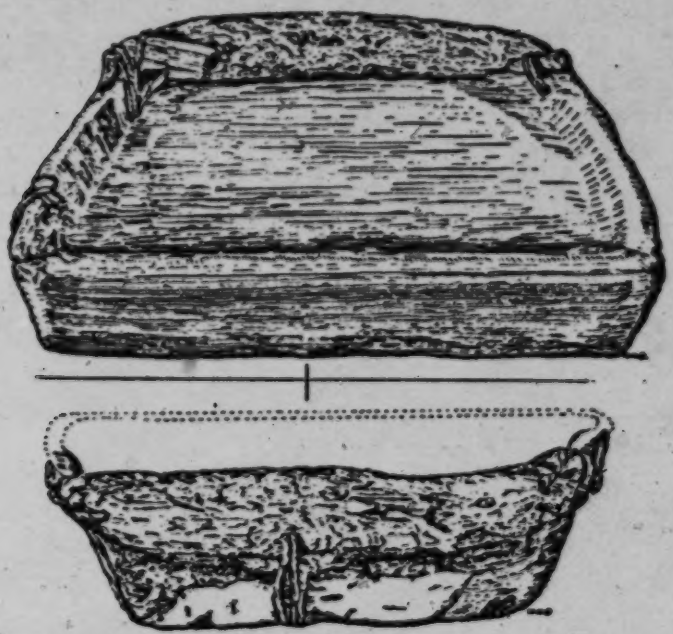

Figure 55. Lamp repaired with wood. IV.D.1888. Approx. 1/3.

The National Museum of Canada possesses two very shallow ellipsoidal lamps, obtained in Prince Albert Sound, that have no partitions, are rounded on the bottoms, inside and outside, and must be tilted forward to permit the oil to flow to the wick. One (Figure 56), 15¼ inches long by 8½ inches wide, has been

[113]

[1] Cf. Simpson, John: The Western Eskimo: Arctic Papers for the Expedition of 1875, London, 1875, p. 287.
[2] The specimen is too heavily encrusted with blubber to determine the exact material of the lashings.

One (Figure 56), 15 1/4 inches long by 8 1/2 inches wide, has been fashioned from a basic igneous rock that seems to be gabbro; the other (IV.D.69), 12 inches long by 7½ inches wide, from an impure red sandstone. These two lamps greatly resemble some from Hudson Bay, and probably came from that direction; for although the Victoria Islanders commonly obtained their lamps from Coronation Gulf, they sometimes travelled south by way of Bathurst Inlet and traded with Eskimo in the vicinity of Back River.

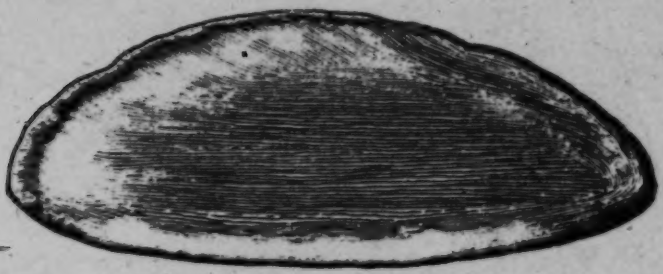

Figure 56. Lamp made from igneous rock. IV.D.67. 1/3.

In the snow-hut the lamp rested directly on two stout sticks laid parallel with one another behind the table. Care was taken to render it perfectly horizontal, or with a slight tilt forward, as a backward tilt prevented the oil from flowing to the wick. On one side both table and sticks were supported by an L-shaped board or strut (Figure 57) of which the long arm was driven into the snow wall near the door, and the short arm rested on the floor or was raised to the proper angle on a block of snow; on the other side, they were pushed into the side wall of the hut. Thus, both lamp and table paralleled the front edge of the sleeping platform, leaving a gap just wide enough for the housewife to slide into her seat.

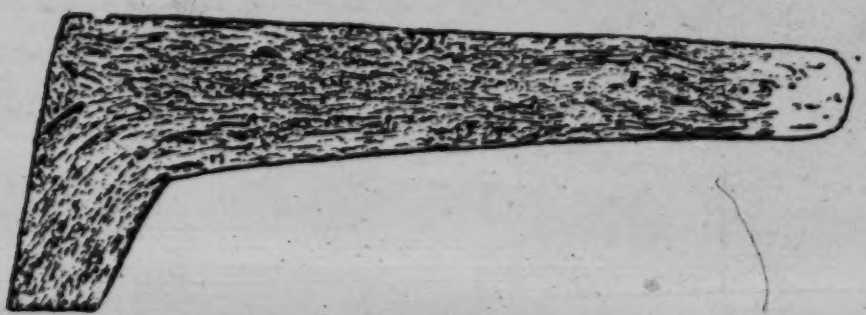

Figure 57. Strut for supporting table. IV.D.699. Approx. 1/12.

Occasionally a family lacked a proper strut to support the lamp and supplied its place with snow blocks. In the spring tent, too, the sticks and boards naturally rested on snow blocks because there was no snow wall to support them. In the late spring and throughout the summer, when most of the household furniture had been stored in caches and the Eskimo were moving over the land,

354 352 two or three stones supported the lamp; and on short winter journeys, when the lamp served only for light, it was simply placed on a block of snow. As already stated, it was seldom employed during the summer months.

354 824 [137] [237] [415] Unlike nearly all Eskimo tribes the Copper Eskimo seldom or never used moss for the lamp-wick, but substituted the seeds of the cottongrass, *Eriophorum angustifolium*, or, more rarely, the catkins of the dwarf willow, either of which gave a more smokeless flame. *Eriophorum angustifolium* matures about the beginning of September, and it was at that season the women gathered the seeds into small bags made of loon skin, marmot skin, or other convenient material. They gathered a large supply, as in midwinter the wick needed daily renewing; and they deferred the separation of the seeds from the stalks until leisure moments in camp.

354 372 237 462 [171] [824] *Lighting and Tending the Lamp.* The Copper Eskimo lighted and tended their lamps in the same way as the Eskimo of Smith Sound[1] except that they did not chew the blubber and spit it into the lamp. The housewife took out of a sealskin poke two or three strips of blubber a foot or more long by several inches wide, and with a specially designed hammer of musk-ox horn (*See* Figure 63) pounded them on the table to break up the cells.[2] She then laid them in the well of the lamp, when a little oil began at once to accumulate on the bottom, unless the weather was extremely cold. In this oil she soaked her eriophorum seeds, and arranged them along the lip of the lamp in a continuous line so that their lower edges touched the bottom of the well (or at least dipped into the oil that shortly accumulated), and the upper edges projected about a quarter of an inch above the rim. To light the wick she pinched it up into little points 2 or 3 inches apart, which readily caught fire from the torch; and by patting up adjacent parts of the wick with her lamp-trimmer she quickly produced a continuous smokeless flame rising to a height of about three-quarters of an inch. As the heat melted the oil out of the strips of blubber, she removed them to the back shelf of the lamp until they drained; then, later, she threw them to the dogs. Sometimes, if the lamp already contained a certain quantity of oil, she placed fresh strips of pounded blubber on the same shelf instead of in the well, so that the oil would not accumulate too rapidly and drip over the outer edges of the lamp. The Copper Eskimo had no device for melting the blubber on a stick or shelf, such as was common in both the eastern and western Arctic.

354 462 Hough[3] says that lamp-trimming "only reached perfection in the old women of the tribe, who can prepare a lamp so that it will give a good, steady flame for several hours, while usually half an hour is the best that can be expected." This is not true of the Copper Eskimo. There, the women naturally have more experience than the men, and on the average are more skilful, but many a hunter can tend the wick just as successfully as his wife. A lamp is seldom allowed to smoke; one of the inmates, be it the man, his wife, or even one of the children, is sure to notice it and pat down the wick.

354 415 [171] The same writer states in another passage[4] that "the lamp and the pot usually agree as to size, the rule being that the length of the pot shall be equal to the length of the wick edge." Among the Copper Eskimo, as in Smith Sound and, I believe, elsewhere, the sizes of the two vessels bear no direct relation to one another. For obvious reasons the wick edge of the lamp should be no shorter than the bottom of the pot; but it may be, and often is, much longer, for with her lamp-trimmer the housewife can readily adjust the flame to whatever length she desires.

[113]

[1] Cf. Stromley, H. P.: Contributions to the Ethnology and Anthropology of the Polar Eskimos: Meddelelser om Grønland, vol. XXXIV, p. 229 f.
[2] Polar bear fat was occasionally used instead of seal blubber, and probably fat of any kind is emergencies.
[3] Hough: op. cit., p. [illegible].
[4] Hough: op. cit., p. [illegible].

The lamp-trimmer mentioned several times above was in most cases merely a pencil of wood varying in length from 6 to 18 inches, generally flattened at one end and smoothed. Any small stick, whether of wood, bone, or antler, sufficed in an emergency; I have even seen a man use his knife. The stone (soapstone or asbestos) pencils, often employed in West Greenland and in Hudson Bay,[1] seem to have been unknown to the Copper Eskimo. Unknown, too, were the drip-stands of Alaska, Greenland, and other places. The Coronation Gulf soapstone is not porous as the Greenland soapstone is said to be[2]; and though oil might frequently drip over the edges, it never seeped through the vessel itself. 354 412 [135]

Every household employed torches for lighting extra lamps, for searching the corners of the hut, and particularly for conveying fire from one snow-hut to another. Occasionally a woman used the lamp-stick or even raw lamp-wick, but she always kept for the purpose four or five bunches of matted moss roots that she had collected and dried in the late summer (Figure 47b). Such a torch, dipped in the melted blubber, would burn several minutes, though if carried outside in windy weather it had to be shielded inside a bag or bucket. It was a common sight after a day's march to see the women carrying torches from one hut to another in order to relight their lamps; the first lamp, of course, was lighted with pyrites. 416 [824]

In summer, when the lamp was discarded, the Eskimo carefully extinguished their open-air fires with flat stones in order to reduce the burning wood to charcoal, which readily took a spark on some future occasion and could be kindled into a flame with the breath. In blowing the fire they did not purse their lips as we do, but curled the tongue along the lower palate into a half-cylinder that directed the breath along a narrow path. When carrying glowing coals from one tent or cooking place to another the women usually wrapped them in bunches of dry heather or *Dryas integrifolia;* where no coals were available they used the heather or dryas alone. 372 [824] [137]

POTS

The Back River Eskimo commonly made their cooking pot from five flat slabs of limestone cemented together.[3] Among the Copper Eskimo we saw none of this type, only pots carved from solid slabs of soapstone. Theoretically these pots should have received two forms, one adapted for cooking over the blubber lamp in winter and the other for use over an open fire during the summer months. The pot for use with the blubber lamp should have been a long, oblong vessel, rather narrow, because the flame of the lamp was a long, narrow line; it should have been comparatively deep to hold large pieces of seal and caribou meat; and it might have had considerable dimensions and weight, as it was always carried on the sled during the winter and spring months. The pot for use over an open fire in summer should have been less narrow, and altogether smaller and lighter, because at that season all the household furniture had to be carried on the back. 415 [171] [324] [252] [493] [482]

In actual fact both types existed among the Copper Eskimo, but the longer, narrower form adapted for use over the blubber lamp was far more generally used, as winter conditions prevailed during 8 months of the year. The pot was nearly always rectangular in outline, though one saw occasional specimens of trapezoid form. The corners were sharp, almost at right angles, the sides slightly convex in outline and sloping inward towards the bottom, making the vessel widest and longest at the top; the convexity in the sides was occasionally marked. In large pots there was a tendency for the depth to vary inversely with the breadth, so that the narrower vessels were likewise the deepest.

[1] Porsild, M.: Op. cit., p. [illegible]. Thalbitzer, W.: The Ammassalik Eskimo; Meddelelser om Grønland, vol. XXXIX, p. [illegible] (Copenhagen, 1914). 113

[2] Birket-Smith, K.: Ethnography of Egedesminde District; Meddelelser om Grønland, vol. LXVI, p. [illegible] (Copenhagen, [illegible]).

[3] Chief Factor James Anderson's Back River Journal of [illegible]; Can. Field-Nat., vol. LV, 2, [illegible], p. [illegible].

415 324 At each of the four upper corners a hole was drilled through the wall so that it issued about one-half inch below on the long side. The holes enabled the pot to be suspended by means of two loops of sealskin or plaited caribou sinew, one at each long end, from a horizontal rod; and the loops were adjusted to bring the bottom of the pot about one-half inch above the flame of the blubber lamp. In summer, when a pot was seldom or never suspended over an open fire, but rested on two or three stones, the loops were liable to hang down and be burned in the flames; accordingly, the housewife usually replaced them with two cords that ran diagonally between opposite corners, and allowed her also to raise the pot with one hand.

The wall of a pot often fractured at a corner hole, whereupon a second hole was drilled alongside the former one, in large vessels through the wall of the longer side, but in small ones occasionally through the end wall. Fractures in [414] the body of the pot were mended with short bands of beaten copper as we mend [381] china and porcelain, holes being drilled on each side of the fracture. The Copper Eskimo appeared to use no cement other than fat or grease to fill up the crack.

All pots, except the very smallest, had a low horizontal ridge carved across each short end about half-way down its outer face. Its original purpose, no doubt, was to facilitate the handling of the vessel, especially when mittens were worn, but in modern times it was largely ornamental, for it seldom projected more than about one-eighth inch and did not increase or decrease with the size of the vessel.

Pots varied in size from toys an inch or two long to vessels of 24 inches, capable of holding several quarts. An average vessel for use over a blubber lamp was about 18 inches long, 7 inches wide, and 4½ inches deep, with sides roughly ¼-inch thick. These were the dimensions at the top of the vessel; the bottom was about an inch shorter and half an inch narrower. Some of the larger pots in the possession of the National Museum of Canada have the following dimensions:

Catalogue number	Length	Breadth	Depth	Thickness
	Inches	Inches	Inches	Inches
IV.D.677	23¼	7¼	5	¼
IV.D.682	23	8	4¼	☆
IV.D.668	22¼	6¼	6	☆
IV.D.686	18¼	8¼	5	☆
IV.D.1562	19	9	4¼	☆

415 324 414 356

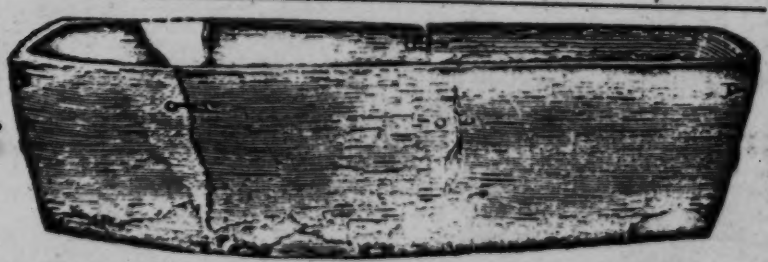

Figure 58. Soapstone pot repaired with copper bands. IV.D.1562. Approx. 1/3.

Three pots are shown in Figures 58-60. No. IV.D.1563 (Figure 58), obtained from a Prince Albert Sound or Minto Inlet native, is unusually

interesting, because it has been broken across in two places and repaired with six copper bands. Moreover, unlike all the other pots from this region in the possession of the museum, it is made from a biotite chlorite schist. Yet in shape it is almost a duplicate of No. IV.D.676 (Figure 89), the sides in both pots being unusually convex. The latter vessel came from Coppermine River, and is of the usual soapstone (talc chlorite schist) from the quarry near Tree River.

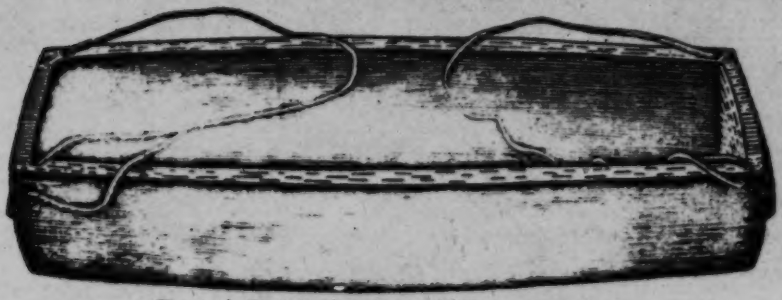

Figure 88. Typical soapstone pot. IV.D.676. Approx. 1/2.

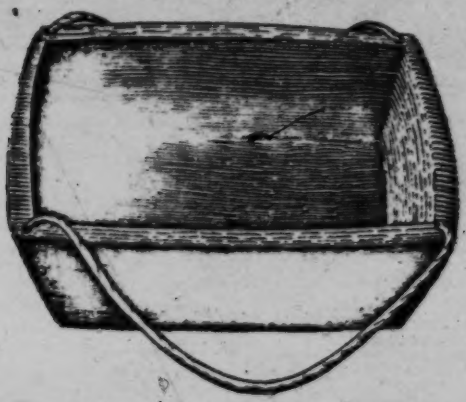

Figure 89. Squarish soapstone pot, now in Royal Ontario Museum, Toronto.

From an artistic point of view it would seem that the pots of the Copper Eskimo have degenerated during the last 150 years, for Hearne gives a slightly different description of the vessels he saw in the Eskimo encampment at Bloody Fall, near the mouth of Coppermine River. "Some of those kettles are so large as to be capable of containing five or six gallons; and though it is impossible these poor people can perform this arduous work with any other tools than harder stones, yet they are by far superior to any that I had ever seen in Hudson's Bay; every one of them being ornamented with neat mouldings round the rim, and some of the large ones with a kind of flute-work at each corner. In shape they were a long square, something wider at the top than bottom, like a knife-tray, and strong handles of the solid stone were left at each end to lift them up."[1]

[1] Hearne's Journey from Prince of Wales's Fort in Hudson's Bay to the Northern Ocean, edited by J. B. Tyrrell: The Champlain Society, Toronto, 1911, p. 102.

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

The flute-work in the corners and the strong handles of solid stone both disappeared, though the latter survived among the Caribou Eskimo.[1] In order perhaps to replace the handles, the neat ridges were lowered down the face of the short ends, and they were dropped entirely from the longer sides. With regard to the flute-work in each corner one may perhaps conjecture that it was a rounded projection pierced with a suspension hole, as in the pots of West Greenland,[2] to avoid drilling through the actual wall. So far as I know no specimen exists of the type of pot seen by Hearne.

TABLE

The table, having no legs, was practicable only in a snow-hut where one end could be supported by the snow wall.[3] As soon as the snow melted, therefore, it was cached with the lamp at some convenient spot on land and abandoned until the early winter. In shape, it was roughly rectangular, with one end often a little wider than the other; and in size, it ranged from 3½ to 4½ feet long by 10 to 15 inches wide. An average specimen is shown in Figure 61.

Figure 61. Table. IV.D.698. Approx. 1/12.

DRYING FRAME

The Copper Eskimo generally bestowed very little care on the making and handling of their drying frames, which, in consequence, were frequently broken and bent out of shape. Properly made specimens were never round, but roughly oval, the curve being flattened on the long side that fronted the sleeping platform. Occasionally the two ends of the wooden hoop were merely lashed together; more often they were pegged with bone or copper pins. The frame was further strengthened by cross bars of sticks that passed at intervals of a few inches from one long side to the other and were lashed to the under edge of the frame exactly as the cross bars of a sled were lashed to the runners. Newly made specimens, especially if large, had webbings of rawhide, but when the rawhide dried out and broke the owners often mended it with sinew. The thongs passed through holes (often sunken) in the frame, forming a warp and a weft that interlaced in what is known as cross-weft pattern, and gave square meshes from 2 to 4 inches across. A typical drying frame is shown in Figure 62. Simpson reported frames made of baleen on the south coast of Victoria Island near Wellington Bay,[4] but all that I observed were made of wood.

[1] Birket-Smith, K.: The Caribou Eskimos, pt. I, p. 149; Report of the Fifth Thule Expedition 1921-24, vol. V, Copenhagen, 1929.

[2] Thomsen, T.: Implements and Artefacts of the North-East Greenlanders; Meddelelser om Grønland, vol. XLIV, p. 468.

[3] For the method of supporting this table, lamp, cooking pot, and drying frame see Reports of the Canadian Arctic Expedition, vol. XII, pt. A, p. 61.

[4] Simpson, Thomas: Narrative of the Discoveries on the North Coast of America, London, 1843, p. 304.

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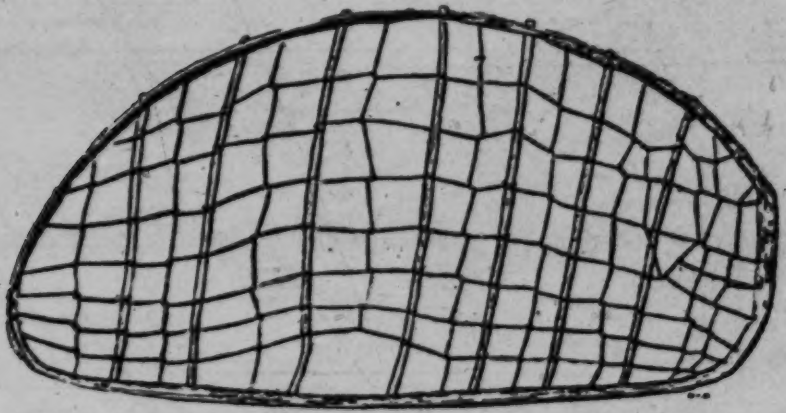

Figure 62. Drying frame. IV.D.647. Approx. 1/14.

BLUBBER POUNDERS

Although a stone or any convenient implement might be used in an emergency to pound the blubber for the lamp, every household possessed at least one, and often two or three implements especially made for this purpose. It was invariably of musk-ox horn, curved evenly almost to a semicircle. The handle was flattened on the sides, and had three or, more usually, four grooves on the under surface to fit the fingers; rarely it ended in a small knob. In size it varied from children's toys 2 or 3 inches long to specimens of 11 inches; the average household size was around 8 inches (Figure 63). Ornamentation was rare, but one specimen in the possession of the Museum (IV. D 1611) has etched into its surface the ring-and-dot design and three parallel lines.

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Figure 63. Blubber pounders, of musk-ox horn, the smallest a toy only. IV.D.180, 435, 1622. Approx. 3/8.

These Copper Eskimo blubber pounders of musk-ox horn differ slightly from the Netchilik specimen figured by Boas.[1] The latter have for the first finger a deep notch that seems to form almost a right angle, sharply dividing the hammer end from the handle. All the Copper Eskimo specimens that I have seen bear rounded grooves only, so that their form is much more graceful. Blubber pounders were used in west and northwest Greenland,[2] and probably also both in Mackenzie delta and in Alaska. The typical West

412 392 321 171 [113]

[1] Boas, F.: Eskimo of Baffin Island and Hudson Bay; Anth. Papers, Am. Mus. Nat. Hist., vol. XV, 1907, p. 468.
[2] Thalbitzer, William: Meddelelser om Grønland, vol. 30, p. 385.

Greenland implement seems to have been made of antler, the heavy base at right angles to the prong forming the hammer head.[1] For Mackenzie delta and Alaska our information is less certain, but some bone-headed mallets figured by Murdoch,[2] were probably used for pounding blubber; they are mounted on wooden handles like the ordinary stone-headed mallet from this region. The Museum possesses a stone mallet (IX.F.323), unmounted, from Barrow that was said to have been used for pounding blubber.

The blubber pounder made of musk-ox horn is evidently a special product of the central regions, where alone, except for the uninhabited northern archipelago and North Greenland, the musk-ox has persisted down to the present day. The convenient shape and weight of the natural horn doubtless suggested its use for this purpose; and the grooving of the handle for the fingers was already practised with certain other tools, such as the marline-spike for the back-lashings of the bow.

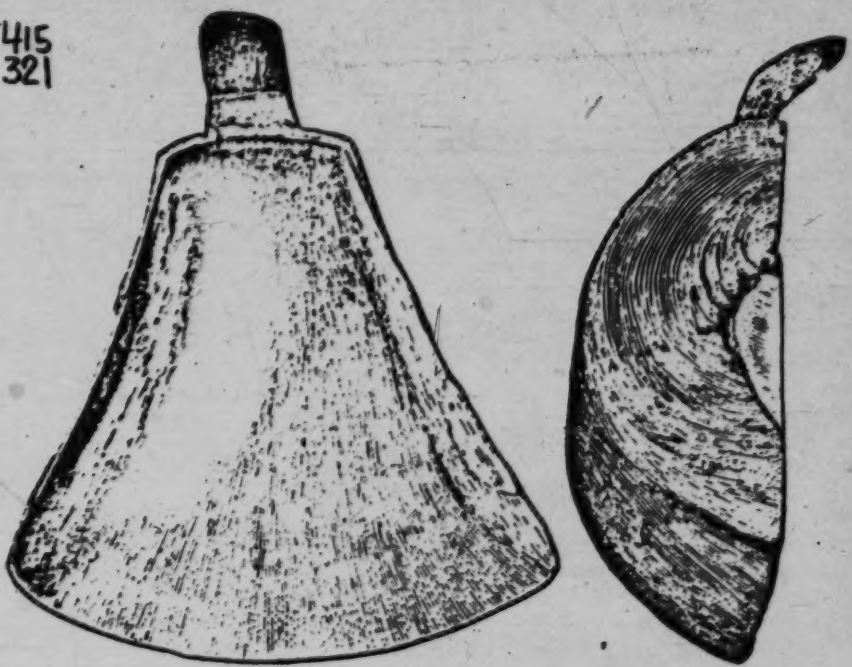

Figure 64. Drinking ladle, of musk-ox horn. IV.D.1489. Approx. 1/3.

LADLES AND DRINKING HORNS

Drinking ladles of musk-ox horn were indispensable to every household, but never carried by hunters in the field. Their usual shape is illustrated in Figure 64. In size they varied from children's toys 4 or 5 cm. long (often made of

[1] Birket-Smith, Kaj.: Ethnography of the Egedesminde District; Medd. om. Grøn., vol. LXVI, fig. 91.
[2] Murdoch, John: Ninth Annual Report of the Bureau of American Ethnology; Smith. Inst., pp. 87-88.

wood) (Figure 65) to large dippers 25 cm. long and 21 cm. wide at the outer rim. Another common type was long and narrow, almost rectangular, like the specimen shown in Figure 66; and between this type and the former there were gradations of every kind. Most specimens were slightly flattened on the bottom to prevent them from tipping over.

Figure 65. Toy wooden ladle. IV.D.130a. 1/1.

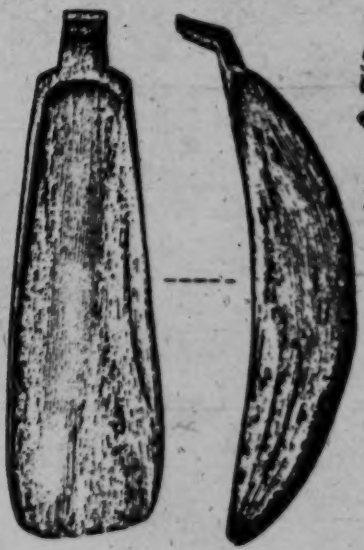

Figure 66. Narrow ladle, of musk-ox horn. IV.D.168. 1/2.

Much less common than either of these two types was the drinking horn, where the small end was either cut off and plugged with bone or wood (Figure 67), or else curved back to provide a handle (Figure 68).

Figure 67. Drinking horn, of musk-ox horn. IV.D.1638. 2/3.

Nearly all ladles had the short handles slightly upturned. Often it was found easier to make this part separate, and to attach it to a short extension of the bowl with pegs of copper, bone, horn, or antler (Figure 69). Cracks and holes in the bowl, and broken edges, were patched in a similar manner (Figure 70).

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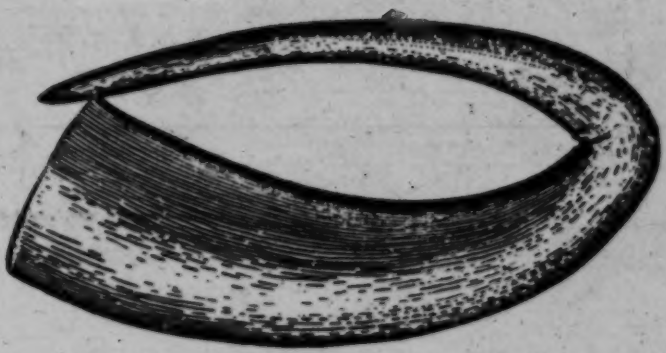

Figure 68. Drinking horn, of musk-ox horn. IV.D.1618. 2/3.

Figure 69. Ladle, of musk-ox horn, with jointed handle. IV.D.1622. 1/1.

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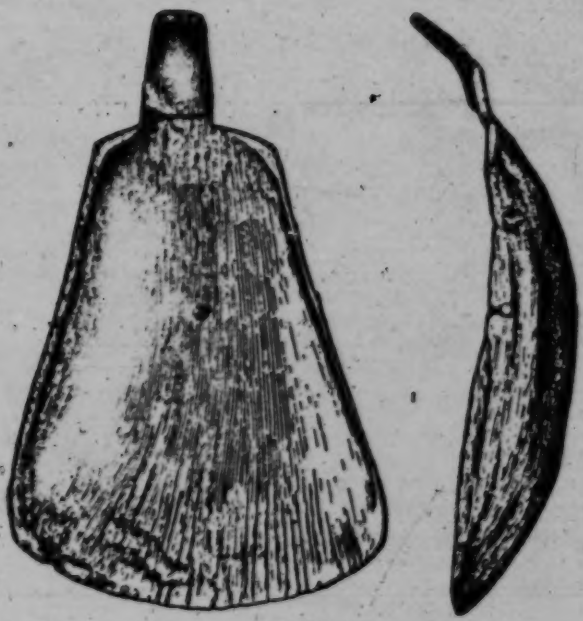

Figure 70. Repaired ladle. IV.D.644. 1/2.

WOODEN DISHES

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The wooden dishes for holding meat and blubber ranged in size from 5 or 6 inches to almost 2 feet. Some were round, with hollowed, saucer-like bottoms; they were made by curving a thin slat of spruce wood into a circle, joining the two ends with bone or copper rivets, and mortising in the bottom (Figure 71). Other dishes, made in exactly the same way, were oval instead of round (Figure 72). Besides these two forms there were oblong dishes with sloping sides, made by hollowing out a solid block of wood with the adze and the knife (Figure 73). I saw no baleen dishes such as are common in other parts of the Arctic.

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Figure 71. Round dish, made from two pieces of wood. IV.D.617. 1/2.

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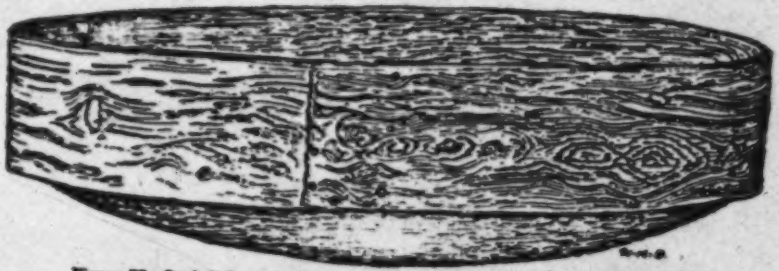

Figure 72. Oval dish, made from two pieces of wood. IV.D.825. Approx. 1/4.

Figure 73. Dish hollowed from one piece of wood. IV.D.826. 1/4.

WATER BUCKETS

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281 The bucket for carrying water (Figure 74) was made from tanned sealskin, and fitted with a strap handle of the same material. Its usual capacity was slightly over a gallon. The vessel lasted much longer than might have been expected, because holes and small rents could be quickly patched without impairing its tightness. As with our canvas buckets, ice that formed on the inside was broken loose by hammering on the outside with a stick.

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[171 When travelling in winter, a few Eskimos carried on the back, under the clothing, a cylindrical water bottle (Figure 75) made from the gullet of a seal. The stopper was a wooden plug lashed inside the mouth of the bottle. Similar "thermos" bottles were known in the eastern Arctic also.

Figure 74. Water bucket, of sealskin. IV.D.816. 1/4.

MEAT FORKS

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321 Meat forks, used for testing and removing the meat from the pot, but not for eating, were made of bone or musk-ox horn, more rarely of antler. Most were slender, tapering pencils, slightly curved, ranging in length from about 7

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to 12 inches. Often they were flattened at the broader upper end, whose edges were not infrequently serrated (Figure 76).

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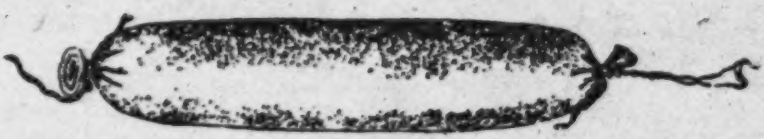

Figure 75. Water bottle, made from the gullet of a seal. IV.D.291. 1/2.

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Figure 76. Bone meat forks. IV.D.801, 498. 1/2.

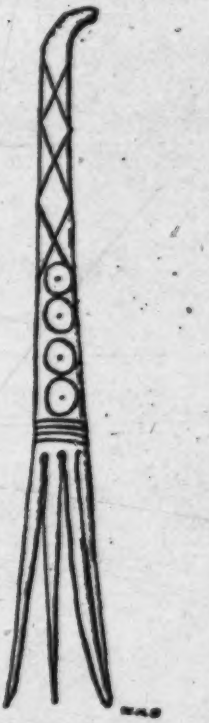

Figure 77. Meat fork, decorated. IV.D.1692. 1/2.

A very unusual meat fork obtained by Captain Bernard in Coronation Gulf is shown in Figure 77. It has four prongs, and the shaft is ornamented with incised crosses, parallel lines, and the ring-and-dot pattern. It might almost be mistaken for a peculiar kind of comb, but Captain Bernard stated that it was actually used as a fork. [531]

SNOW KNIVES OF ANTLER AND BONE

412 32 [192] To chop up the blocks of snow in the cooking pot, women frequently used a knife of antler, more rarely of bone, known as *havuyaq*, a light, roughly made tool, two specimens of which are shown in Figure 78. Many women, however, simply used the curved knife or *ulo* for this purpose.

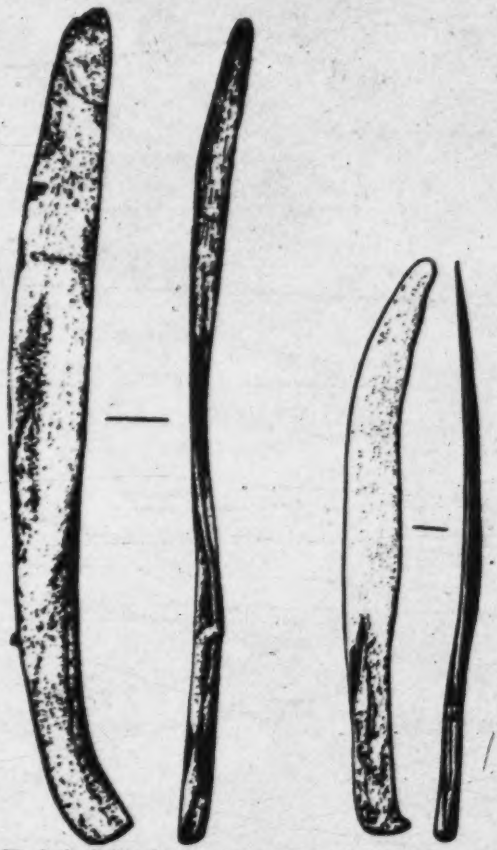

Figure 78. Antler knives for chopping snow. IV.D.128, 278. Approx. 1/3.

[171] These antler knives are identical with those used in the Hudson Bay area for scraping ice from kayaks, but the Copper Eskimo had little or no occasion [462] to employ them for this purpose. A woman sometimes used one to chop snow [342] for filling in gaps between the snow blocks while her husband completed the building of a hut, but even this was unusual.

SNOW SHOVEL.

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Owing to the difficulty of procuring wood large enough for its manufacture, the snow shovel, which measured on the average 3 feet long by 18 inches wide, ranked with the table among the most precious possessions of the household. [422] Often a native, unable to obtain one plank of proper width, resorted to splicing, and lashed two boards, one broad and one narrow, side by side. The cracks [284] that developed in nearly all shovels were kept from spreading by similar cross-lashings of rawhide, until the average tool had as many as six or eight "splices" [356]

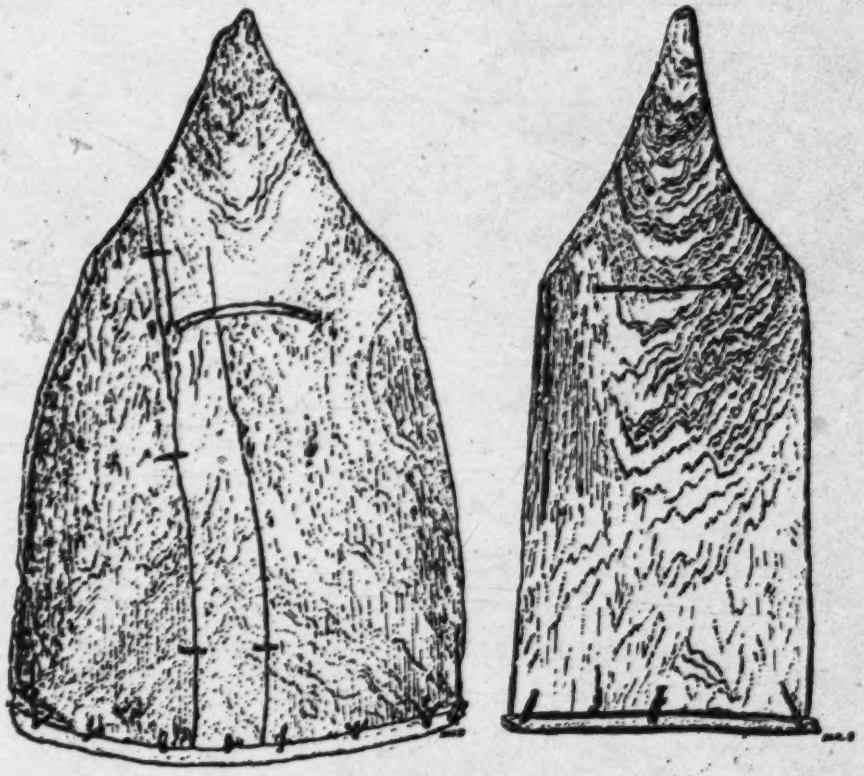

Figure 79. Snow shovels. IV.D.782, 1668. Approx. 1/3.

on its surface. At the bottom was an edging of bone (rarely ivory), securely [321] lashed to the wood through a number of holes; and about the middle of the face [284] was the handle, a half-hoop of antler pushed through two holes and pegged, or, more rarely, a strap of rawhide. Because this handle was liable to break through the wood, some natives strengthened the holes with bone gaskets. The general shape is illustrated in Figure 79.

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SNOW DUSTER

The snow duster, used for beating the snow from the clothes immediately before or after entering the snow-hut (and also for driving out the dogs), was merely a stick 2 feet or less in length, slightly curved, and carefully smoothed so that it would not tear the clothes, but not ornamented in any way. A typical specimen is shown in Figure 80.

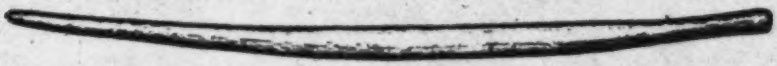

Figure 80. Snow duster. IV.D.1618. Approx. 1/8.

BAGS FOR CLOTHING

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The Eskimo kept their spare clothing in round or oval bags made of sealskin or caribou hide (Figure 81a). Caribou leg skins with the fur retained were preferred for the sides, and dressed sealskin for the bottom; but housewives used any material that lay to hand. Some of the round bags, which averaged about

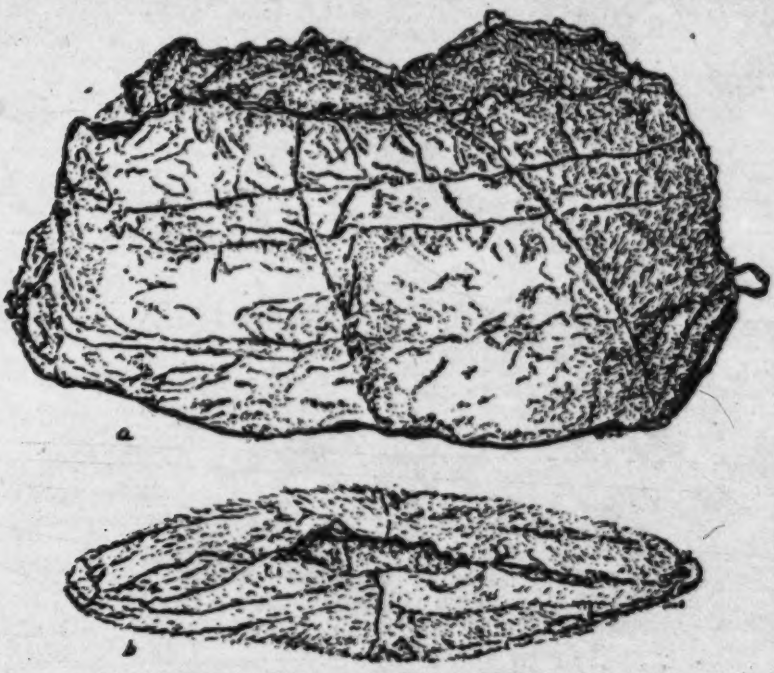

Figure 81. Bags for clothing. a: IV.D.60; b: IV.D.921. Approx. 1/6.

3 feet in diameter, laced across the top; others were tied with strips of skin extending from opposite sides, and fitted with strap handles of skin or plaited sinew to facilitate handling. The oval bag (Figure 81b) somewhat resembled

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the men's tool bag, but was much larger and opened in the middle instead of at one end. Some women preferred this shape for storing the narrow white belly skins with which they decorated their garments, but it was far less common than the deeper rounded type.

In summer these bags of spare clothing were cached on top of high rocks out of reach of foxes. Rain occurred so rarely that their exposure to the weather brought little harm. In winter they were stored in a cupboard-like hole under the bed, or on the retaining wall outside the house. [353]

BEDS

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The willow mattress and bed skins have been described in Report of the Canadian Arctic Expedition, 1913-18, vol. XII, page 61. The sleeping bag was merely a long sack made from the heavy autumn skins of the caribou, unsewn or slit half-way down one side so that the occupant could crawl into it more easily. Husband and wife slept in one large bag; each child had a bag of its own.

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CHAPTER IV

TOOLS AND WEAPONS

WOMEN'S TOOLS

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Knives. All women's knives conformed to one general pattern (Figure 82). They had a more or less curvilinear blade, formerly of copper, now of iron, a handle of bone, musk-ox horn, or antler, and a tang-like connecting piece, nearly always of bone or antler and only rarely of copper, that was attached to the blade by copper rivets, and to the handle by being driven through a slot. The edge of the blade was almost flat, but it usually curved upward sharply at each end. One specimen had a copper tang of one piece with the blade, but in all other respects it conformed to the usual pattern. Modern knives have both blade and tang of iron, fastened together with iron rivets.

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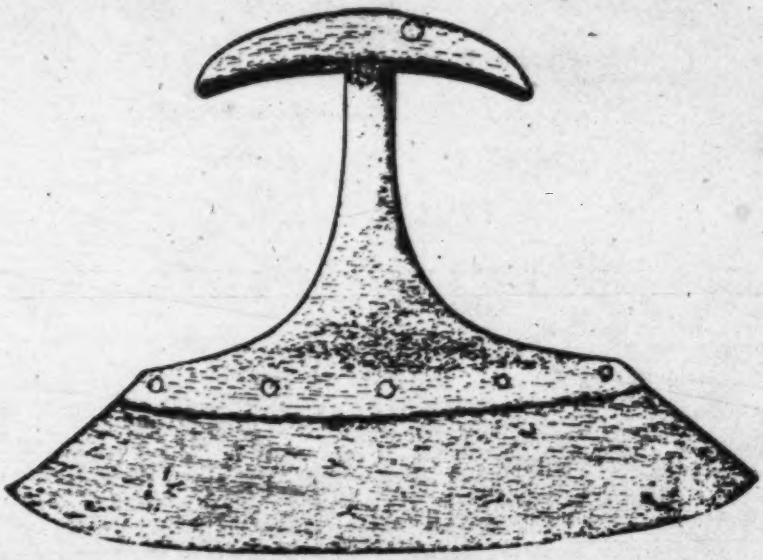

Figure 82. Typical woman's knife or ulo, with iron blade. IV.D.223. 2/3.

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From Victoria Island two specimens were obtained that differed from all others we saw in actual use. One of them is illustrated in Figure 83. It has no tang, the upper corner of the blade, which forms almost a right angle, being driven directly into the bone handle; furthermore, the edge of the blade has a very marked and regular curve. The other specimen (IV.D.1281) is similar, except that the handle is of wood. Both have large copper blades, and from their appearance are quite new. I feel certain that they were made for sale,

I feel certain that they were made for sale, either by Copper Eskimos, or, more probably, by western Eskimos who entered their country after 1914. They correctly reproduce the tangless form of the women's knife still current in Mackenzie Delta and in Alaska, a form that was

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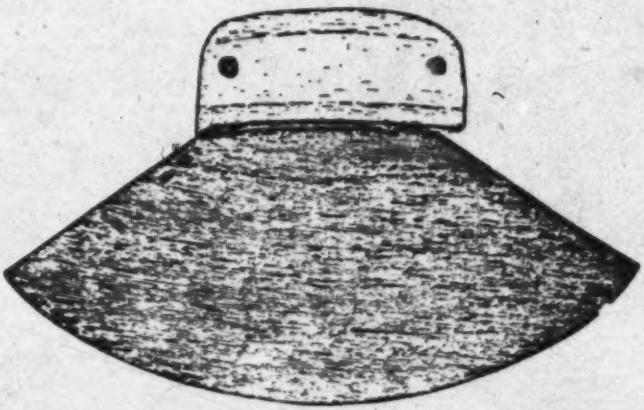

Figure 83. Tangless woman's knife, probably of western Eskimo origin. IV.D.1467. 2/3.

Figure 84. Knife with copper blade, found in old stone house on Victoria Island. IX.D.120. 1/1.

prevalent in prehistoric times in the Copper Eskimo region also, where, in addition to tangless, stone-bladed knives, two copper-bladed ones have been found, one in an old stone house on Victoria Island, the other (Figure 84) in a stone grave on the small Read Island in Dolphin and Union Strait.

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The Copper Eskimo evidently experienced considerable difficulty in accurately splitting the thin base of the tang longitudinally for the insertion of the blade. Hence the tang was sometimes merely tapered flat to fit one face of the blade, through which it was riveted to an added piece of bone or antler laid on the other face. Figure 85e, which illustrates a specimen picked up on a grave, shows how this was done. When the tang itself was of copper, as in Figure 85c, it could be riveted directly to the blade without the necessity for support on the other face.

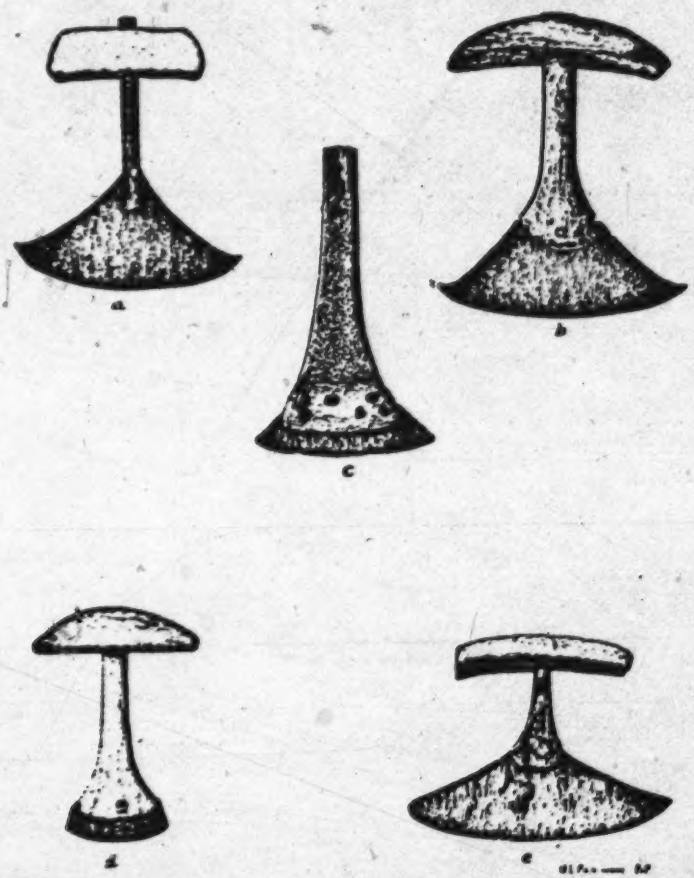

Figure 85. Women's knives, all but one (*c*) with iron blades, IV.D.515, 516, 572, IV.D.592; (*c*) with copper blade, IV.D.464. 2/3.

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Like several other Eskimo tools (e.g., skin scrapers), the women's knife was operated away from the body, thus enabling its user to see where she was cutting. The larger knives, which alone bore the name *ulo*, served for cutting

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meat; the smaller ones, which had a special name *qimalik*, for cutting and trimming skins. In shape, they were practically identical, except that the smaller tool often had a more rounded edge than the tool used for cutting meat.

Women's knives, like men's, often had sharpeners attached to them by a cord of sinew. The earlier sharpener was the tooth of some animal, often the molar tooth of a musk-ox or bear; or a whetstone made from sandstone or other gritty rock; or a stick of copper mounted in a bone or antler handle (Figure 86). By 1914, nearly every native was using a fragment from a file, or the firing pin of an old rifle. Men generally used their sharpeners as a butcher uses his steel, but the women held the steel in the left hand and ran the edge of the blade to and fro along its surface.

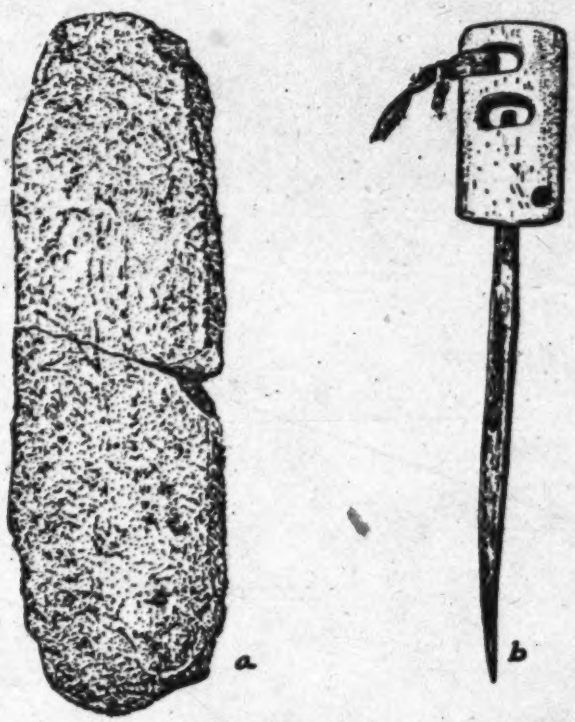

Figure 86. a: whetstone, IV.D.77; b: copper knife sharpener, IV.D.1361. 1/1.

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Skin Scrapers. The scraper used to remove the fat and inner tissue of skins had a small copper blade with a curved edge mounted on a long handle of antler. Today, in this as in other implements, iron has taken the place of copper. The handle was nearly always forked, the branch-prong preventing the hand from sliding forward. Most specimens had also a notch for the forefinger cut in the under side. Figure 87c shows a typical specimen; its iron blade is fastened by two copper rivets to the handle, which has been flattened on its lower face. Its prototype with a copper blade is shown in Figure 88.

412 When a pronged antler was not available, the natives often made an
321 artificial prong. Thus Figure 87b illustrates a copper-bladed scraper with an
325 antler peg driven into a handle of the same material; a groove on the under side of the handle seems to indicate that it was used as the top piece of a bow-drill. The workmanship in the specimen illustrated in Figure 87a is much more
[414] careful. This scraper also has a copper blade attached to its antler handle by means of copper rivets, and a well-made knob on the under side of the handle for a finger rest. The upper surface, however, has been neatly trimmed and fitted with a small pronged piece of antler, held securely in position with three pegs of the same material.

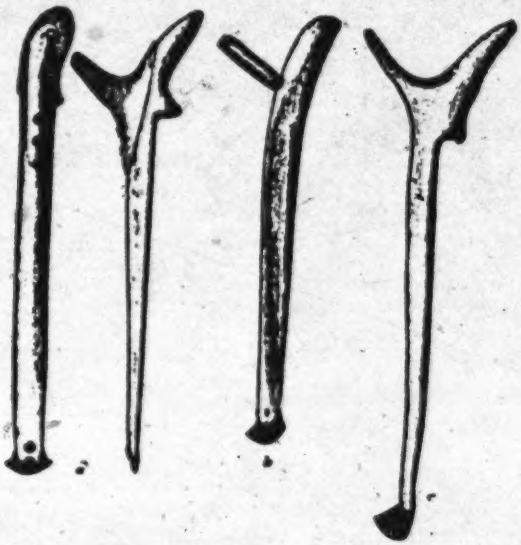

Figure 87. Skin scraper. a: IV.D.1619, and b: IV.D.1620, with copper blades; c: IV.D.448, with iron blade. Approx. 1/3.

Figure 88. Skin scraper, with copper blade. IV.D.439. Approx. 1/2.

412 *Skin Stretchers.* There were two names for skin stretchers, *eqtoqsium* and
[192] *ku.gun.* The words are treated as synonymous in my notes, but it is more probable that each applied only to one of the two types that are described here. Some families possessed both kinds of stretchers, others only one.

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The first kind was made from the shoulder blade of the caribou or musk-ox trimmed to the shape shown in Figure 89. The blade was generally much larger and wider than in the second type, making it more suitable for large surfaces. Specimens ranged up to 14 inches in length.

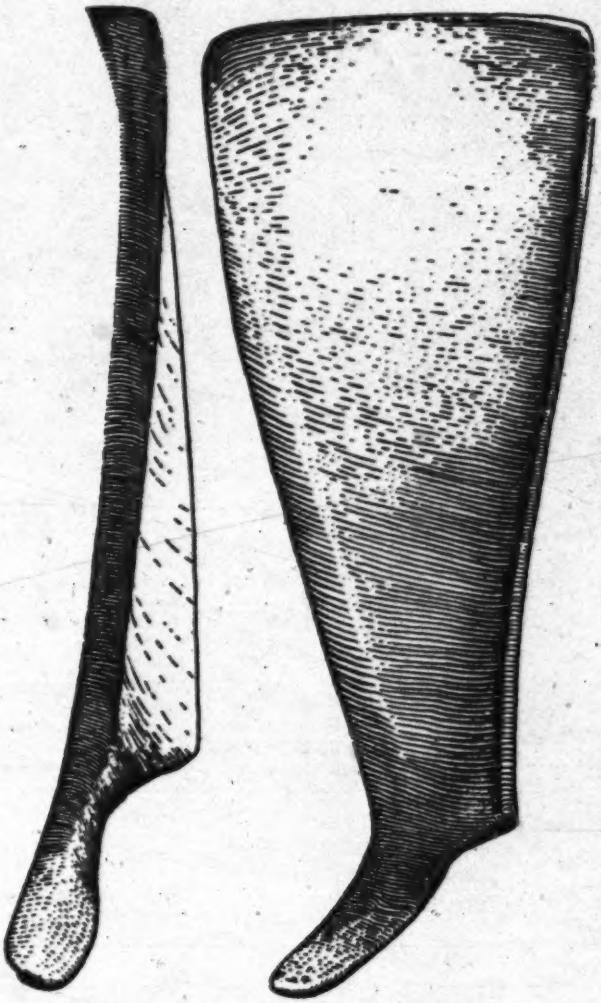

Figure 89. Skin stretcher, made from a shoulder blade. IV.D.175. 1/2.

The second kind was made from the leg bone of the same animals, which was either split all the way down the middle, or, more usually, bevelled off at

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its lower end. The upper end was usually knobbed or curved to afford a better grip. The edge of this type of stretcher was sometimes almost semicircular (Figure 90c).

There was a slight difference in the manner of holding these two types. In the stretcher made from a shoulder bone the thumb rested on the upper surface of the blade and the pressure on the hand was divided almost equally between the palm and the cleft between thumb and forefinger. In the stretcher of leg bone, on the other hand, it was the forefinger that usually rested on the blade and the friction came almost entirely on the palm.

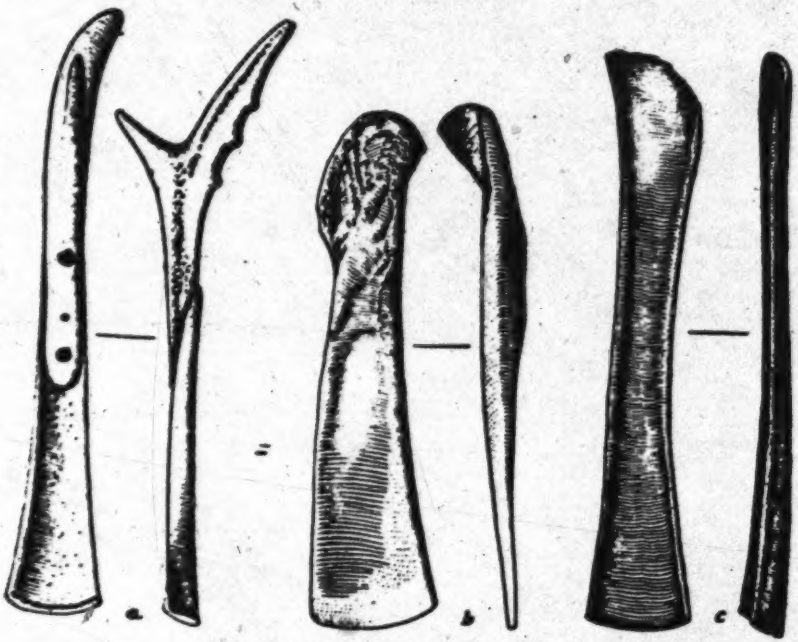

Figure 90. Skin stretchers, made from leg bones. IV.D.1022. 264, 328. Approx. 1/2.

Figure 90a shows a very unusual specimen. The blade is made from the leg bone of the musk-ox, but in order to lengthen it and give a better grip it has been attached by copper rivets to a handle of antler such as is used for the skin scraper. Another unusual feature about this specimen is that the handle is grooved to fit the fingers, like the blubber pounder and the marline-spike for the bow. It was purchased in Coronation Gulf.

The specimen shown in Figure 90b has a number of holes drilled into the handle, both at the end and on one side, which are not visible, unfortunately, in the drawing. Two of them still retain traces of hide or sinew, indicating that the end was once covered with hide to protect the hand. Usually the worker simply wore a mitten, which had the same effect.

283 *Sinew.* All the sinew that I saw used for actual sewing came from the back of the caribou; the much coarser leg sinew was employed only for fishing

lines, harpoon lines, and lashings of various kinds. No doubt the Copper Eskimo in emergencies made use of sinew from other sources, for the Mackenzie Delta natives sometimes use the sinew on the tail of the fox, which is about a foot long and said to be of excellent quality. 283

After the flesh had been carefully scraped away the sinew was allowed to dry a little; but as prolonged exposure to the heat of the sun rendered it stiff and brittle, it was generally stored away at once in a bag. The value of a slab of back sinew was fairly high everywhere along the Arctic coast.[1] Caribou were very abundant in the Copper Eskimo country until about 1919, but in the absence of linen or cotton thread—which in any case is less suitable for skin garments—sinew was in such great demand that it was constantly traded from one family or group to another. [435] [136] [437]

For ordinary sewing a thin strand was stripped off the slab with the teeth or thumb nail, drawn through the teeth to remove all roughness, and rolled against the cheek to twist it into a single smooth thread. Waterboots, however, called for a stouter three-ply thread, made by the women and girls in the house, where they fastened the ends of the threads to the drying rack, and caught the middle strand between the second and third fingers while they crossed the two outer ones with the thumbs and index fingers. Fishing lines of leg sinew were plaited similarly of three strands, but the harpoon lines, which required to be flat, had from four to eight strands, sometimes even more. Twisting, as with rope, was an unknown art.

Sewing Bags and Baskets. A Copper Eskimo woman without her needle and thread would have been as uncomfortable as a European housewife without her knitting. Sewing was no impediment to gossip: the woman sat on the sleeping skins, her legs doubled under her or stretched out in front, and plied her needle and her tongue at the same rate. Always she sewed from right to left; only a left-handed person sewed in the opposite direction. She held the thimble on the first finger (not on the middle, as we do), and pushed the needle through the skin with the side of the thimble, not with its top, if indeed it had a top. Then she caught the point between the thumb and middle finger, drew the needle out, turned it on its side, and with her thimble behind it pulled through the thread and reinserted the needle for the next stitch. Usually she did not tauten the thread until the second stitch. 294 462 [516] [521]

There was more sewing to be done at certain seasons than at others. Thus, in the autumn, all the new clothing for the winter had to be finished before the sun disappeared below the horizon for the long winter night. The women then sewed from early morning until late at night, with only brief respites to cook the meals or to pass the time of day with neighbours. A woman who had no children to sew for was, of course, less busy; the mother of a family was obliged not only to make the clothes for the whole household, but to train her girls to be dressmakers also. The latter began their training with odd scraps of skin, which they learned to join with neat close stitches. Later, they mended rents in their own clothing, and made dolls fully clothed from head to foot. Many men could make their own trousers and socks, and even sealskin shoes in an emergency; but only a very few could cut out a well-fitting coat or make a pair of waterboots that would really keep out the water. Even the women never attained great skill in these last-mentioned tasks until long after marriage, and a young wife often sought the assistance of an older relative or friend. [221] 294 462 828

The work-basket of most women was a bag of caribou or some other skin, or else, more rarely, a neatly worked basket of coiled willow twigs held in place with willow-bark stitching (Figures 91, 92). All the baskets that I saw were 415 [285]

[1] In 1914 the price of one slab of reindeer back sinew at Barrow, Alaska, was $1.

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28: Jenness E-5 (1914-1916) 1946
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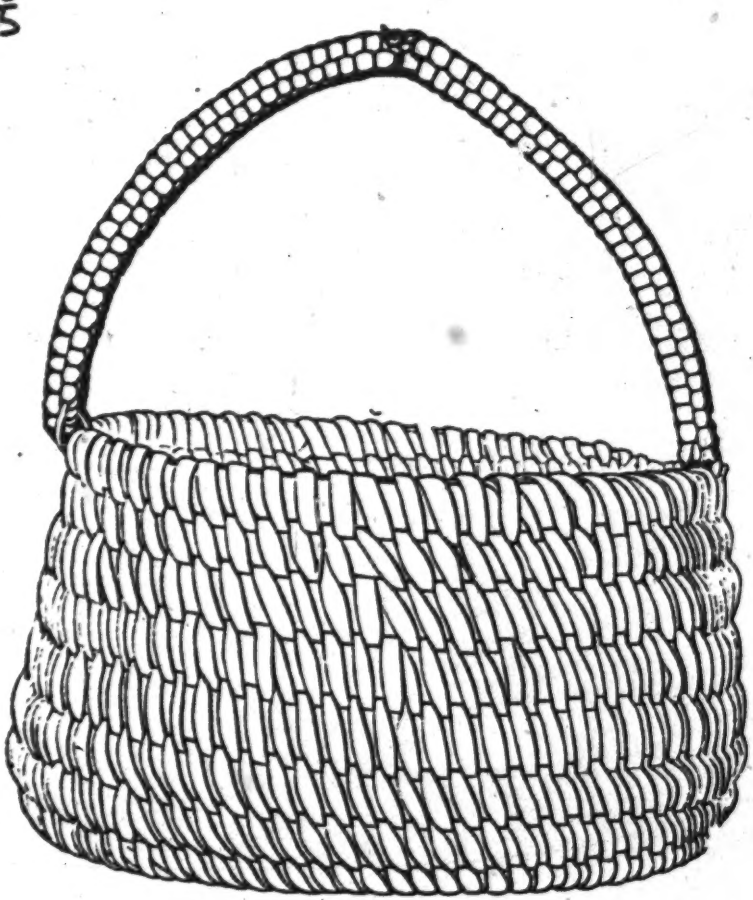

Figure 91. Sewing-basket, of willow twigs. IV.D.1318. 1/1.

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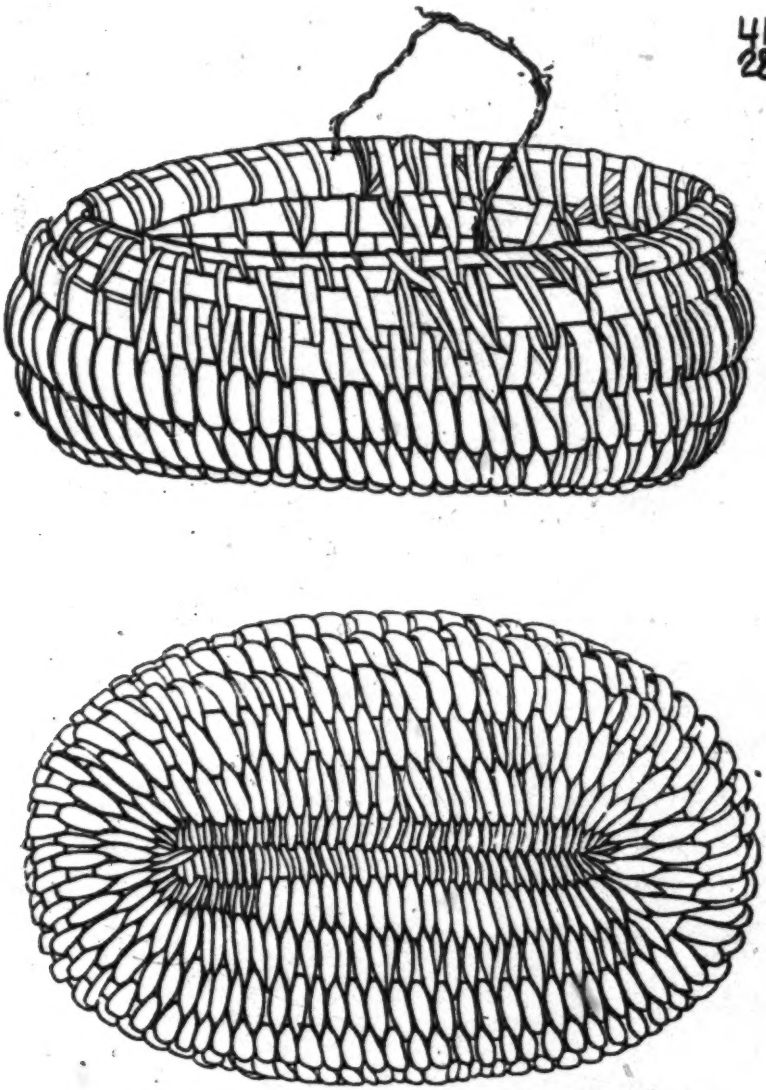

Figure 92. Sewing-basket, of willow twigs. IV.D.1216. 1/1.

415 very small, two of them, indeed, hardly more than an inch in diameter, serving no other purpose than to store one or two European needles. The larger baskets were sometimes provided with handles plaited square from four strands of the same willow bark.

415 412 Many women possessed no work-basket at all, but carried their sewing gear loose; when moving from place to place they merely stowed it inside a bag, a mitten, or even the household cooking pot. Their outfit was really very limited; it comprised only a needle-case, a thimble and its holder, a small knife for cutting the skins, a small cutting-out board perhaps, some sinew, and a few scraps of skin for patches. The knife has been discussed already on page 80.

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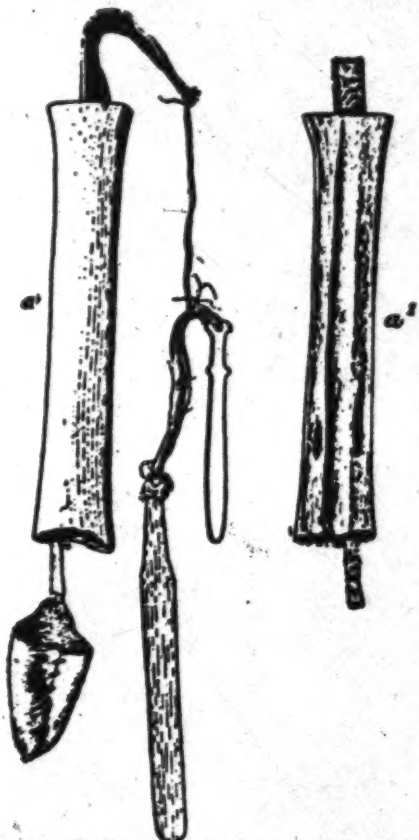

Figure 93. Needle-case and attachments. IV.D.341. 1/2.

321 415 *Needle-cases.* The ordinary needle-case was made from one of the leg bones of a caribou, usually the carpal bone, which was split, trimmed to the proper shape with a whittling knife, and ground down and smoothed with a pebble (Figures 93-97). Exposure to the weathering processes of the atmosphere

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gave these bones a dazzling whiteness, for which reason, in 1915, a young girl strung about a dozen unfinished needle-cases to a stick and left them to bleach throughout the whole summer. The final smoothness and polish came from handling.

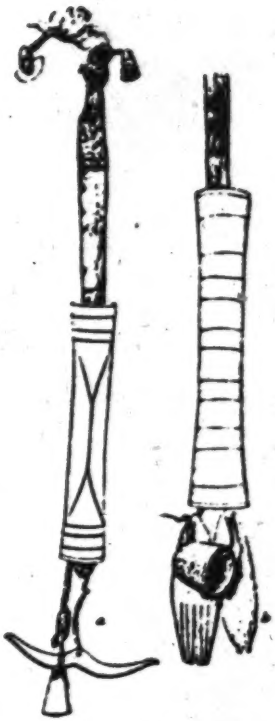

Figure 94. Needle-cases and attachments. IV.D.454. 1633. 1/2.

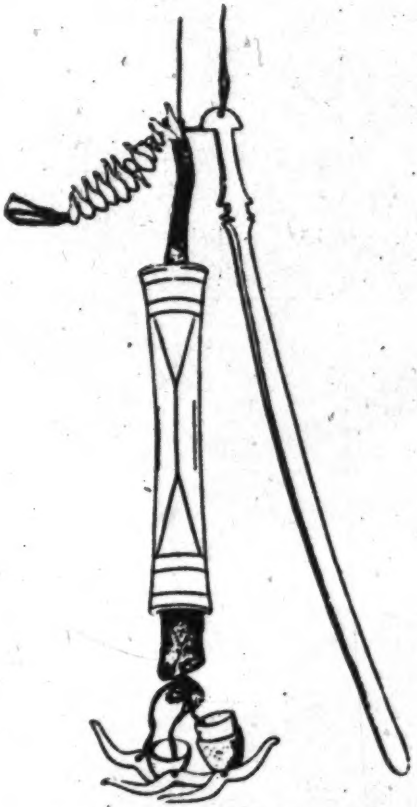

Figure 95. Needle-case and attachments. IV.D.1632. 1/2.

Quite a number of needle-cases, however, were made, not from the leg bone of the caribou, but from the wing bone of a swan, goose, or other aquatic bird (Figure 96). They were much smaller and more rounded than the ordinary needle-case, which was usually flat on one side. These smaller needle-cases of wing bone were used mainly by hunters to repair their footgear or rents in their clothing at times when the women were absent. They were then attached to the bow-case, and often contained merely a needle of the usual type and a little sinew; instead of a thimble the hunter used his teeth, and his skinning knife took the place of the proper knife for cutting skins, the *qimalik*.

[224]
[192]

Most needle-cases were ornamented with incised lines very similar to the tattooed lines on women. This ornamentation will be discussed in a later section.

[531]

325 412 *Needles.* The Copper Eskimo seemed to have no recollection of bone sewing needles, but only of needles made from their native copper. They inserted them into a narrow strip of sealskin, or more rarely caribou skin, and drew them inside the needle-case for protection.

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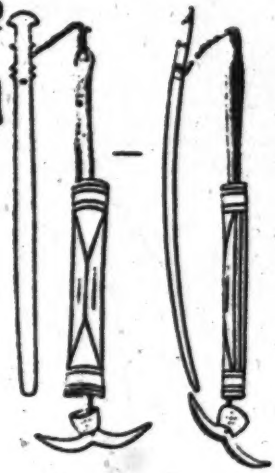

Figure 96. Needle-case and attachments, front and side view. IV.D.151. 1/2.

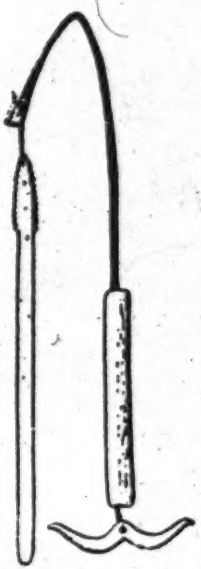

Figure 97. Needle-case and attachments. IV.D.230. 1/4.

Figure 98. Hunter's needle-case, from bird bone. IV.D.287. 1/1.

325 412 Copper needles had practically disappeared when we visited the country, although a considerable number were made for sale. The few genuine specimens that I have seen were nearly square in section, from 2½ to 4 inches long, and with eyes drilled from both sides (Figure 99).[1] Iron needles, hammered out in the same manner as the copper ones, were still in common use, but as most of them were too large to enter the needle-case, they were kept by their owners in a separate strip of sealskin or in a bunch of matted moss roots.

412 [281] [321] *Thimbles.* There were two kinds of thimbles. One was simply a cap of sealskin to cover the tip of the finger (*See* Figure 93a); when not in use it was often attached by a short thread to the sealskin that contained the needles. The other and more usual kind was made from a small bone in the foot of the caribou, or sometimes from the horn of the musk-ox. In nearly all cases the upper end was open like a ring, because only the side of the thimble was used, not the top. One variety was equally broad all around, and had tiny holes pitted over all or part of the outer surface; another variety resembled a signet ring, except that the broad surface was worn in front, not behind, and that face

[1] The copper needles collected in Coronation Gulf by Hanbury in 1902, now in the British Museum, are square, as are also some iron needles that were collected by Rae in Repulse Bay 50 years earlier.

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alone was pitted with holes. With constant usage the pits soon perforated right through the bone, when the thimble, ceasing to protect the finger, was thrown away. When steel needles were introduced the wear on the thimble was much greater than with the soft copper needles; consequently, there was quite a demand for metal thimbles, which had the further merit of chafing the finger less than the old bone ones. The metal thimble was then often kept in a tightly fitting bag of skin or cloth tied to the skin containing the needles; but the old bone thimble had a special toggle that is described below.

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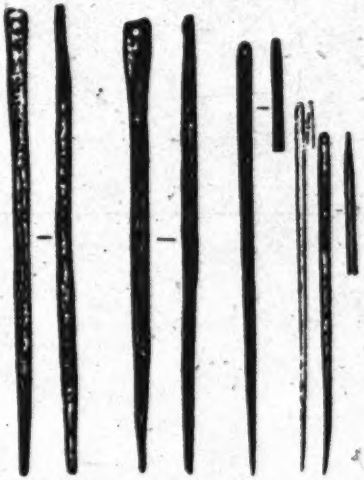

Figure 99. Copper needles. IV.D.329, 330. 1/1.

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A few thimbles are shown in Figures 100 and 101. Figure 100 illustrates the first stage in the manufacture of a bone thimble from a phalangeal bone of a caribou; Figure 101c gives the front view of what was perhaps the commonest variety, although this specimen is pitted on one face only; *b* is a side view of the signet-ring type; *a* is a thimble of musk-ox horn, closed at the top, possibly in imitation of European thimbles.

Figure 100. Unfinished thimble. IV.D.577. 1/1.

[192]

Thimble Holders. The thimble holder used with the open-topped bone thimbles was a small toggle made usually from the breast bone of a caribou (Figures 94-97). It always bore the same shape, which resembled somewhat the outstretched wings of a bird; but the length varied from 1½ to 3 inches. A small hole drilled through the middle enabled it to be tied with a sinew thread to the strip of sealskin containing the needles; the thimble merely slipped on over the toggle and dangled on the thread. The toggle provided also a very convenient handle for drawing out the needles, although its name, *tikivik* or "thimble-place", indicates that this was not its primary purpose.

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Pendants to Needle-cases. A marrow spatula was generally attached to the sealskin at the end opposite to the thimble holder to help in drawing the needles inside the case, and to prevent the skin from pulling right out; but sometimes the skin was merely left larger at this end, or carried a button, shaped like the

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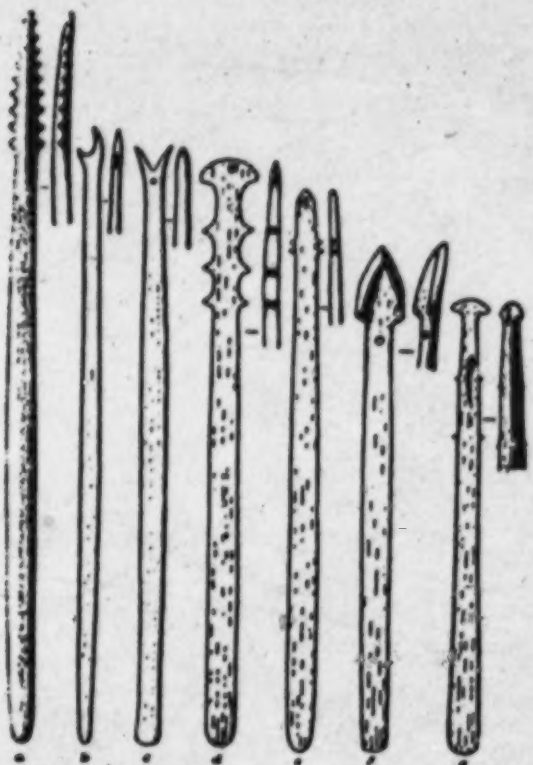
Figure 101. Thimbles. IV.D.[illegible], [illegible], 477. 2/1.



a b c d e f g

Figure 102. Bone marrow spatulas. IV.D.[illegible], [illegible], [illegible], 151, [illegible], [illegible], [illegible]. 1/2.

buttons on clothing. Other objects were occasionally attached to the needle-case, especially combs (*See* Figure 94). These articles were not essential to the outfit, but attached to it only for convenience or ornament. They are, therefore, discussed in other places.

Cutting-out Boards. There was no special shape to the board (*qeorvik*) used for cutting and trimming skins, provided only that it was small and flat. The women often carried a board about 6 inches long in their sewing bags. 412 281 [192]

Boot Creaser. A special implement, *tiguyaun*, "a tool to grasp", usually just a flattened stick of bone with a dull edge, was used occasionally to crease the toes of the white sealskin shoes. Most women, however, used the nail of the right thumb, and bestowed on it the magnificent name *kumitikshararluk*, "my shoe-making tool". 412 [192]

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Figure 102. Threading needles. IV.D.[illegible], 181. 1/1.

Figure 104. Scissors, with blades of hoop iron. IV.D.1612. 4/5.

Marrow Spatulæ. Spatulæ for removing the marrow from the leg bones of the caribou and musk-ox were attached, as a rule, to the needle-case, or carried by hunters in the bags of their bow-cases. They varied greatly in shape, some showing a resemblance to meat skewers, others to marline-spikes; but they were less massive than the marline-spikes, and their flat, blunt points generally distinguished them from meat skewers. Nearly all were of bone, generally a caribou leg bone, but occasional specimens were of antler or even horn. The handle, drilled with a small hole when attached to the needle-case, was frequently carved into a small oval butt like the butt of the snow knife; or it was notched or serrated. There was rarely any etching of the surface, probably because the implement was too small. 412 321

A small assortment of spatulæ is shown in Figure 102. Specimen *f* in that figure is a very unusual form that would hardly have been identified as a spatula had I not seen it in actual use; it was attached to the needle-case of a

412 321 young girl. The specimens attached to the needle-case in Figure 93 are considerably shorter than the average. The commonest type was perhaps that shown in Figure 95, where it is also attached to its needle-case.

412 321 281 *Threading Needles.* Small bone needles were employed for threading a cord through holes in skin, especially for fastening together the front of a tent above the door. In form some of these needles were practically identical with many pins used for closing the blood bag, though the latter were usually longer and terminated in a greater variety of forms. Two threading needles are shown in Figure 103.

412 177 [439] *Scissors.* Probably as early as the middle of the nineteenth century the idea of using scissors for cutting the hair of the head came to the Copper Eskimo from Hudson Bay natives, who acquired European scissors in trade with the Hudson's Bay Company and with whalers. Copper Eskimo specimens of fairly recent date had tin blades mounted with copper rivets on bone or antler. The best example I have seen is illustrated in Figure 104.

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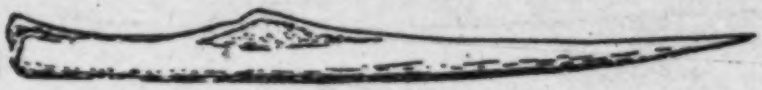

Figure 102. Bone awl. IV.D.1778. 1/1.

[281] *Awls.* To punch holes in skin the Copper Eskimo used any pointed tool that was handy, e.g., the corner of the woman's knife, an arrowhead, a sealing skewer, or, occasionally, a mere splinter of bone. Specially made awls were extremely rare, but a bone one from Cambridge Bay is illustrated in Figure 105.

MEN'S TOOLS

415 412 [224] Attached to the hunter's bow-case was a special tool bag to hold spare parts for the bow and arrows, meat skewers, and other implements connected with the chase. This bag naturally became the repository at times of other tools, such as the adze, that were not directly connected with hunting. However, most men

Figure 103. Man's tool bag of caribou fur. IV.D.738. 1/2.

owned a second small tool bag of caribou or other fur (Figure 106), and two or three had wooden boxes put together with iron or copper nails. Tools like the snow sounder and the ice chisel that were too long for any of these receptacles were generally stuck into the ground outside the tent, or into the wall of the snow-hut.

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Figure 107. Man's knife, with copper blade. IV.D.1455. Approx. 1/4.

Knives. The oldest Copper Eskimo knives of which there is any record had large copper blades, lanceolate in form and sharp on both edges. Generally the blade had a tang, which was driven into an antler handle without being riveted, but occasionally there was no tang, the blade being set in a slot and secured with a single copper rivet. The handle was sometimes of two pieces, spliced together and riveted with copper or bone pegs, and the butt was a separate piece of bone, or sometimes musk-ox horn, pegged to the handle. A lashing of sealskin or willow root, which began through a hole in the butt and was wrapped around most of the handle, afforded a better grip than the smooth antler; its loose end passed through another hole and was tucked under one or more bights. A short loop of sealskin was often added in the side of the handle so that the knife could be hung on a button of the coat, or attached to a toggle on the bow-case (Figure 107).

[414]

An excellent specimen of such a knife, collected by Captain Collinson at Cambridge Bay in 1852, is now in the Pitt-Rivers Museum at Oxford, England. Another specimen, with a rather shorter blade, collected by Lieutenant Singleton, of H.M.S. *Fox*, from an unknown locality, is in the Horniman Museum, Forest Hill, London. Others, collected by either Collinson or his colleague McClure on Victoria Island, are deposited in the British Museum. These are the oldest specimens known to me from the Copper Eskimo region. Hanbury collected several similar knives in 1902 between Ogden Bay and Coppermine River, some of which are also in the British Museum.

Even in the nineteenth century a considerable amount of iron found its way into the Copper Eskimo country and was utilized for knives. Figure 108 shows a knife made from iron secured from McClure's ship, the *Investigator*, which was abandoned on Banks Island in 1851. The blades of these early iron knives correspond as nearly as possible to the copper ones; they were lanceolate, and hammered thin on both sides toward the edges. However, early in the twentieth century, European steel knives began to drift in from the south and southeast, and soon afterwards more knives and a quantity of iron entered the country from Great Bear Lake and from the west. The natives then removed the handles from the European knives and mounted them according to their own fashion; but often they left the shape of the blade intact. Accordingly, one found iron-bladed knives that had one or both edges sharp, or else half the back edge sharp and the other half blunt. These iron blades, also, were generally mounted in a slightly different manner from the old copper knives; their tangs were riveted between plates of iron that were riveted in turn to the antler handles.

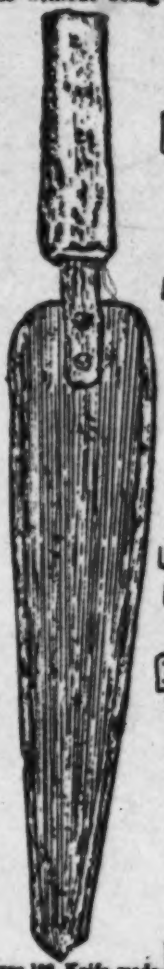

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Figure 108. Knife, made of iron from McClure's ship *Investigator*. IV.D.418. 1/2.

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By 1914 hardly a single copper-bladed knife remained in the country, except specimens that had been manufactured for sale to the first traders, like those shown in Figure 109. All the Copper Eskimo were using iron knives of various sizes and shapes, some with small blades and long handles, others with long blades and short handles, some single-edged and some two-edged (Figure 110). Specialization in types was beginning. For cutting snow, knives with long handles and long blades were accounted the most useful; for skinning caribou and seals, knives with shorter handles and blades of medium length. Some natives still preferred two-edged knives for skinning, others liked a sharp point, curved back, and a blunt back edge, as in the European hunting knife. Many men made still smaller knives for miscellaneous uses around the camp. A certain number of small knives with copper blades may have been used even in the earliest days,[1] but all such specimens that I have seen, whether of iron or copper, date from the twentieth century, and the copper ones were made to sell to Europeans. Certainly the commonest type of knife in pre-European days, perhaps the only type outside the whittling knife, was the large lanceolate form commonly called the snow knife.

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Figure 109. Copper-bladed knives made for sale. a, IV.D.1361, 1/2; b, IV.D.243, approx. 1/2.

The older Thule inhabitants of the region, like those to the west and east, used a large, curved snow knife, nearly always made from whalebone. Figure 112 (IV.D.1660), however, shows a specimen obtained by Capt. J. Bernard in Coronation Gulf that is made from musk-ox horn. The local Eskimo knew its purpose, but had no recollection of ever using such a tool themselves.

Whittling Knives. Typical whittling knives (*haviro.n*) with iron blades are shown in Figure 113. Copper was used for the blade in early times, but I was able to obtain only two examples, one of which is shown in Figure 114. Here, as often with the iron-bladed whittling knives, the handle is perforated half-way along its length for the attachment of the sharpener, which was usually of steel, but in this case a small copper pencil mounted in an antler handle.

Figure 113*a* shows a fairly old specimen with a tiny blade of what seems to be hoop iron; the handle, as usual, is of antler, and the rivet in this case of copper. In the specimen represented in Figure 113*b* the handle has been extended by splicing a short additional piece of antler. The same thing has occurred in the specimen shown in Figure 113*d*, but such extensions were less usual among the Copper Eskimo than among the Eskimo to the west.

[172]

[1] In 1930 Mr. Lincoln Washburn obtained a handleless copper knife blade (Figure 111) that had been picked up on Victoria Island. One surface only was covered with a green patina; the other was still coppery, though dulled. Probably the specimen is not of great age.

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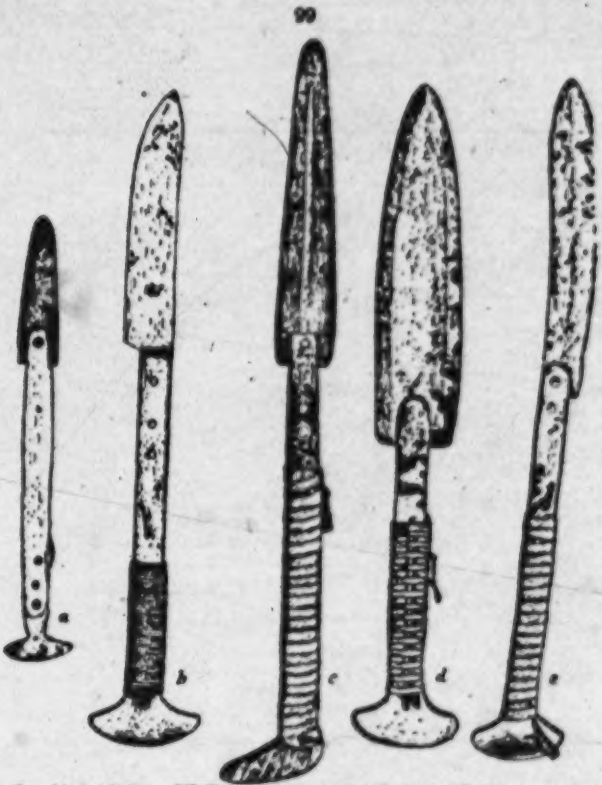

Figure 110. Iron-bladed knives. IV.D.1457, 1459, 1480, 176, 1640. All 1/4 except e which is 1/2.

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Figure 111. Copper knife-blade found on Victoria Island. IV.D.1817. Approx. 1/1.

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Figure 112. Knife blade of musk-ox horn. IV.D.1860. Approx. 2/3.

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Figure 113. Whittling knives with iron blades. IV.D.1618, 172, 1608, 1588. 1/4.

Figure 114. Old whittling knife with copper blade and copper sharpener. IV.D.1670. Approx. 1/3.

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Figure 115. Grooving tools, with iron blades. IV.D.700, 1624, 726. 1/3.

28: Jennese E-5 (1914-1916) 1946
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The method of using the whittling knife in Coronation Gulf and westward differed from the Greenland method described by Porsild.[1] The Copper Eskimo held the knife low down with the hand directed inward, and the handle resting along the inner side of the forearm so that it fitted into the curve of the elbow. With the instrument thus pivoted on the elbow the forearm moved as one unit and the wrist remained perfectly still. Smaller whittling knives, even though their handles did not reach the elbow, were held in the same manner.

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Grooving Tool. The Copper Eskimo had a tool for cutting grooves in bone, antler, and horn similar in shape to the tool used by other Eskimo tribes. The blade, which was nicked at the end or else bore a sharp, pointed projection, was mounted in an antler handle of no particular shape. Sometimes the handle was split for the insertion of the blade, sometimes the blade was simply driven in with a stone, and riveted or not according to the owner's fancy. Figure 115 shows three specimens of the tool, all from Coronation Gulf; but Figure 115c is really a combination tool, because its handle served also as an arrow straightener. All three specimens have iron blades, as indeed did every grooving tool I saw in the country. Whether copper or stone preceded iron in this case I did not discover.

[325] [174]

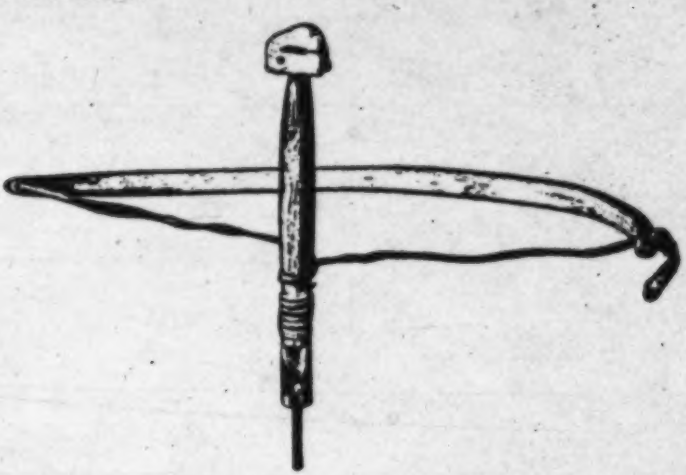

Figure 116. Drilling set. IV.D.708. 1/2.

412 [171]

Drilling Sets. The Copper Eskimo used the three-piece drilling set found among other Eskimo tribes (Figure 116). The bow was of bone, generally the rib of a musk-ox or caribou; a hole was drilled in each end for the attachment of the sealskin cord. The stem or spindle was nearly always of wood, though bone was used occasionally and ivory when it was procurable. To prevent the wood from splitting, a bead of bone, antler, or musk-ox horn was added to it, either as a cap or by splicing. All the drills I saw had points of iron, which had long been current in very small quantities; copper perhaps was used earlier, and stone, although the natives seemed to have no recollection of the stone drill points.

[321] [325] [324]

[1] Porsild, M. P.: Studies on the Material Culture of the Eskimo in West Greenland; Meddelelser om Grønland, vol. LI, p. 122. [113]

412 321 325 [324] The most common mouthpiece was the astragalus of the caribou, though any piece of bone or antler, and even soapstone (Figure 117), might be shaped to serve the same purpose. When a man lacked a mouthpiece he often used the handle of his whittling knife or some other implement. The astragalus has a natural cavity of convenient size, but the rim is low on one side and the end of the spindle liable to slip out; consequently, a bone or metal peg was often inserted to raise the level of the rim in this place (Figure 118). Sometimes a small plate of copper or iron was driven into the bottom of the cavity through one side to give a hard, smooth base for the rotating spindle. The latter feature may be of modern origin, but I am inclined to favour its antiquity on account of the number of specimens in which it is found, and the analogous stone sockets in other regions.

412 329

Figure 117. Mouthpiece for drill, of soapstone. IV.D.1678. 1/2.

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Figure 118. Mouthpiece for drill, made from caribou astragalus. IV.D.294. 1/2.

412 325 322 *Adzes.* Hearne gives the following description of Copper Eskimo adzes. "Their hatchets are made of a thick lump of copper, about five or six inches long, and from one and a half to two inches square; they are bevelled away at one end like a mortice-chisel. This is lashed into the end of a piece of wood about twelve or fourteen inches long, in such a manner as to act like an adze: in general, they are applied to the wood like a chisel, and driven in with a heavy club, instead of a mallet. Neither the weight of the tool nor the sharpness of the metal will admit of their being handled either as adze or axe, with any degree of success".[1]

[114] [1] Hearne's Journey from Prince of Wales's Fort in Hudson's Bay to the Northern Ocean, edited by J. B. Tyrrell, The Champlain Society, Toronto, 1911, p. 121. Hearne, it should be noted, did not use these "adzes" in use. I suspect, indeed, that they were not adzes, but ice chisels.

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By the twentieth century almost every adze was equipped with a blade of iron; only a few retained blades of copper, which were mounted on antler, not wooden, handles, and applied in the ordinary way, not "like a chisel, driven in with a heavy club". Sometimes the blade was lashed directly to the handle, sometimes wedged into a separate head of bone, antler, or musk-ox horn. Examples of both methods are shown in Figure 119.

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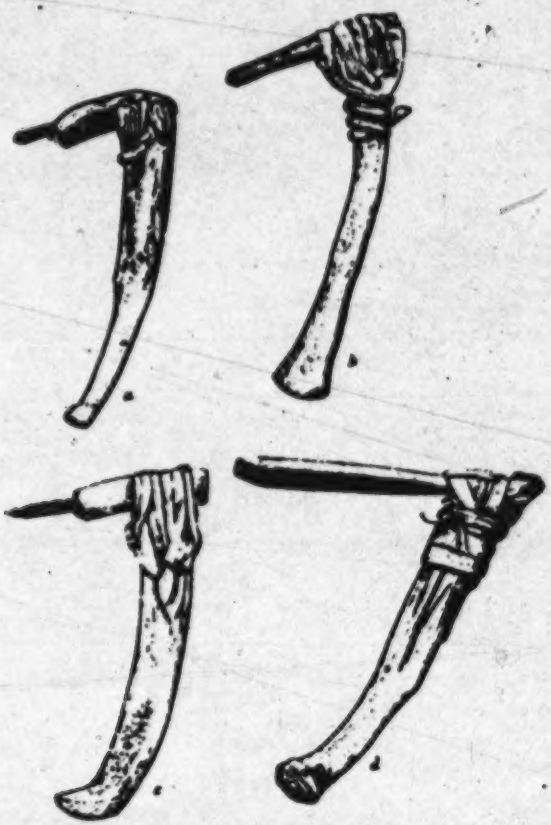

Figure 119. Adzes. *b*, with copper blade; *a*, *c*, *d*, with iron blades. IV.D.1430, 1478, 1428, 1429. 1/4.

Figure 119*b* is an old specimen from Coronation Gulf that has a copper blade lashed with a thong of sealskin directly to the antler handle, the top of which is hollowed to a V-shaped groove to prevent the blade from slipping over the side. The end of the blade was originally wrapped in sealskin to protect the lashing, but the sealskin has worn away on the sharp edges, though it still remains on top and bottom. The handle has four holes for the lashings.

412 325 284 Figure 119d shows a similar specimen with a heavy steel chisel for a blade. Here, both the upper and lower surfaces of the lashing have been protected with sealskin, and the antler handle has only one large hole.

Figure 119a has a steel blade (part of a file) driven into a head of musk-ox horn; the end was wrapped in sealskin to wedge it securely in the socket. Five holes are drilled in the horn head, two in the handle to receive the lashing, which, as always, is of sealskin.

Figure 119c, which also has a steel blade, is mounted in a bone head without wedging. The head is not drilled for the lashing, but has a wide groove that answers the same purpose. The antler handle has only one large hole.

412 321 172 [171] *Mattocks.* Mattocks or picks of heavy bone or antler, mounted on handles like adzes, occur only as relics of the earlier whale-hunting population. Numerous specimens were noted in the ruins at Cape Kellett, on Banks Island, and one of whale rib, much weathered, was found without its handle near Forsyth Bay on Victoria Island (Figure 120). The local natives guessed its purpose correctly, though they had never seen one in use. In pattern it is identical with the mattocks I dug up at Barter Island, in northern Alaska, and with specimens from the "Thule" culture remains in Hudson Bay region.

412 321 [172]

Figure 120. Old mattock of whale rib, found on Victoria Island. IV.D.237. 1/2.

Figure 121. Mattock or pick of antler, IV.D.235. 1/4.

The typical mattock of the Copper Eskimo was simply an unmounted caribou antler with sharpened point, butt crudely shaped to give a grip, and, rarely, a projecting foot as on the handle of the man's knife (Figure 121). Any large antler, curved or straight, served the purpose, and some specimens were

hardly distinguishable from the antler knife used by the women for chopping snow; but a curving prong in which the point formed nearly an acute angle with the handle made a more efficient tool (Figure 122).

Figure 122. Curved pick of antler. IV.D.1634. 1/4.

Mattocks were seldom required except for two purposes, to secure, in the autumn, mud for plastering the runners of the sleds, and to make shallow pits where the hunter could await unseen the approaching caribou. Some families had no mattocks, but no hunter's equipment was quite complete unless he carried a short straight one in his bow-case. In fact, the usual name for a mattock was *tallulit*, i.e., a tool for making a *talla* or hunting pit.

Snow Sounder. The main purpose of the snow sounder was to test the depth and compactness of snow with a view to the construction of a snow-hut. Hunters used it occasionally to probe the breathing holes of seals.

The implement was a straight, slender rod of antler[1] roughly 3 feet long, usually shod at the bottom with a peg of bone or musk-ox horn. The handle, of bone or musk-ox horn also, nearly always took the form of a round button drilled to fit the top of the rod (Figure 123). Figure 124, however, shows a specimen with a more elaborate handle.

FISHING EQUIPMENT

Copper Eskimo methods of fishing have been described in Reports of the Canadian Arctic Expedition, 1913-18, vol. XII, pages 152-157.

Rods, Hooks, and Lines. There were two types of fishing rods. The first was a short stick from a foot to 18 inches long, curved at one end to form a handle, and notched at both ends to wind up the line. The Eskimo often had some difficulty in securing suitable wood for this kind of rod, wood that would bend without cracking. Hence, they frequently spliced two pieces of wood together, or a stick of wood to a handle of antler; or they even made the rod entirely of antler. With dry wood, too, the notches were very liable to break,

[1] Stefansson obtained a very unusual rod of solid copper (Anthrop. Papers, Am. Mus. Nat. Hist., vol. XIV, fig. 4, p. 20 (New York, 1919)).

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322 especially the lower arm of the front notch, which carried the weight of the line; consequently, this notch was often built up by splicing a short projecting piece of wood to the under side of the rod. Sometimes a bone pin was inserted about the middle of the rod, on its upper surface, for shortening the line a little; for in shallow lakes the line was lowered until it touched the bottom, then raised a few inches with a turn around this pin, and fastened with a half hitch to the lower arm of the front notch.

227 The second type of fishing rod was simply a straight stick also notched at each end. Usually it was a little longer than the curved variety and was especially favoured for cod fishing, though no great distinction was made between the two kinds.

Both types of rod, with all their attachments, are shown in Figures 125 and 126.

227 172 → Capt J. Bernard discovered an ancient rod of antler (Figure 127) in an old stone house on Bell Island, off the southwest coast of Victoria Island. It closely resembles Copper Eskimo specimens, though the house itself must date from the earlier Thule culture. I do not know the purpose of the holes drilled in each end.

227 283 → The common line for these rods was a stout 3-ply cord, plaited from caribou leg sinew. It varied greatly in length, but generally ran from 35 to 60 feet. The upper end was fastened in different ways, sometimes with a few half hitches around the front of the rod, sometimes by a knot at the back end; the lower end was attached to the sinker, not to the hook, because the sinker and hook were riveted together.

[284] → For tomcod fishing in winter the western Copper Eskimo preferred a line of baleen to a sinew line, because the latter became encrusted with ice and was easily broken. These baleen lines, which could be quite short, were naturally commonest around Dolphin and Union Strait; natives farther east, who seldom or never saw a stranded whale, obtained them only by trade.

[237] → The sinkers were of bone, antler, or musk-ox horn, most often the first two. There were two types, one for use with a comparatively small hook when fishing in the lakes for trout and salmon, the other for use with a very much longer hook for catching cod.

227 321 → The former type of sinker was usually from 1 to 2 inches long, oval in outline, flat on one face and rounded on the other. Most of them had two holes drilled through the upper end, one below the other. The end of the line then passed twice through both holes, forming a double-stranded noose, and was plaited back an inch or two from the sinker, where it was bound occasionally

Figure 123. Snow sounder. IV.D.1684. 1/4.

Figure 124. Snow sounder with unusual handle of musk-ox horn. IV.D.110. 1/6.

[284] →

[412] [321]

with fine willow bark; many a careless fisherman, however, instead of splicing it, simply fastened it down by two or three half hitches. The same method of fastening the line was adopted when the sinker had only one hole.

The bottom of the sinker was nearly always grooved to fit the end of the hook; and often a small hole was drilled beside this groove to tie on the bait. The hook was originally of copper, but by 1914 most of the natives were using an iron hook beaten out in the same manner as the old copper one (Figure 128). Generally, it was flattened at the upper end and riveted, but occasionally it passed through a hole in the sinker and was pegged to its back (Figure 129). Iron hooks were often driven directly into the bottom of the sinker without riveting. There was never any barb, and the hook seemed extraordinarily large for the size of the fish; but it was never intended to be swallowed, as the fish was jagged in the mouth as soon as it nibbled at the bait.

The bait was usually a strip of skin and flesh from the belly of the fish, or sometimes its œsophagus. After being pushed onto the hook it was lashed to the sinker with a thread of sinew.

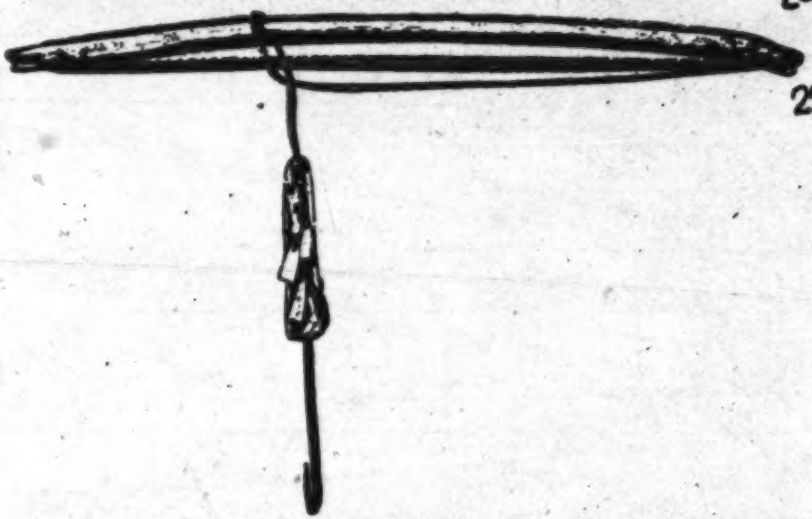

Figure 128. Wood fishing rod and line. IV.D.187. 1/4.

The sinker for cod was made from the same materials as the sinker used in lake fishing, but was generally much longer. The hook was also much longer, varying from 5 to 9 inches; but both it and the line were attached in the same manner. As no bait was used, there was no small hole at the bottom for its attachment; but three or four lures of bone or teeth, sometimes neatly shaped, were fastened at intervals to the under surface of the sinker by means of holes and sinew lashings (*See* Figure 125). Some common forms of these lures are shown in Figure 130. Often the natives dispensed with a hook altogether and used spears and a larger lure, made from a bear's tooth strung with smaller teeth or with gleaming fragments of bone that fluttered like fins in the water (Figure 131). Indeed, they caught more tomcod with their spears

[TEXT CONTINUED ON PAGE 110]

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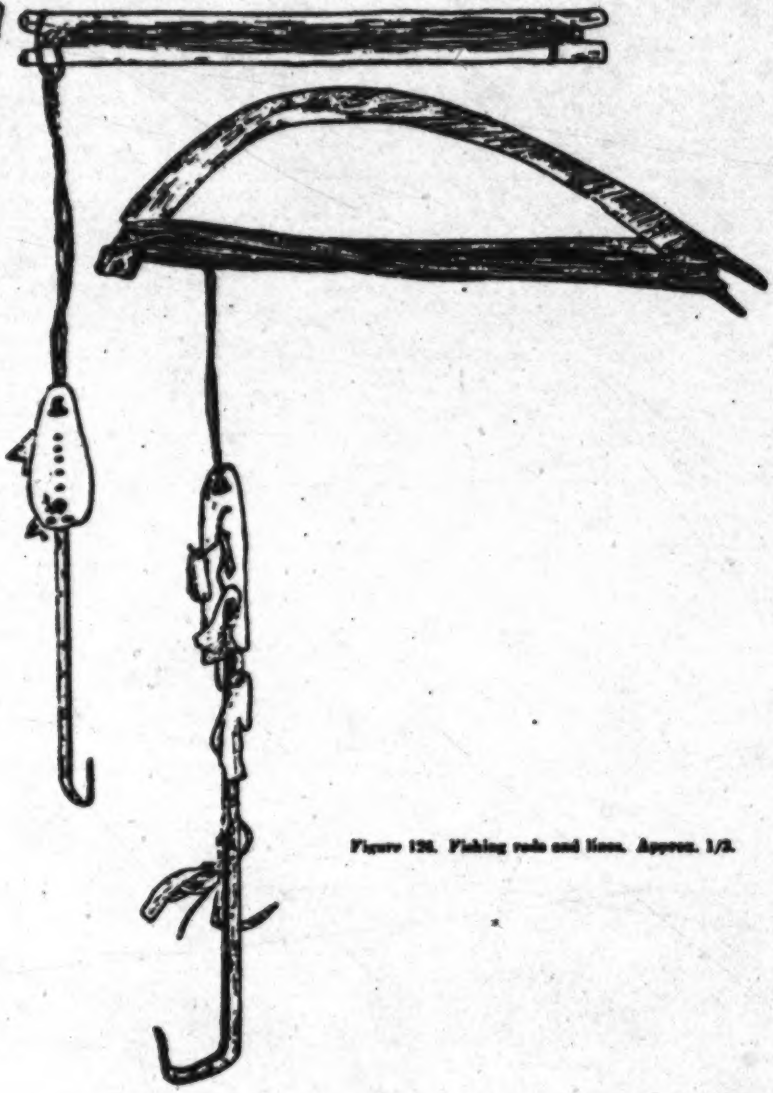

Figure 128. Fishing rods and lines. Approx. 1/2.

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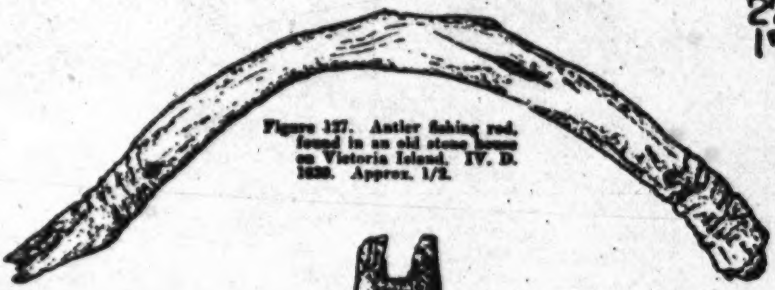

Figure 127. Antler fishing rod, found in an old stone house on Victoria Island. IV. D. 1628. Approx. 1/2.

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Figure 128. Iron fish-hook, set in bone. IV.D.1655. Slightly more than 1/1.

Figure 129. Copper fish-hook, set in bone. IV.D.662. Slightly more than 1/1.

Figure 130. Bone lures used on trimmed fish-line lines. IV.D.377. 1/1.

Indeed, they caught more tomcod with their spears during the winter months than with hooks. The Copper Eskimo never employed the artificial baits of stone or ivory, carved into the shape of fish, that were current among the Eskimo to the westward.

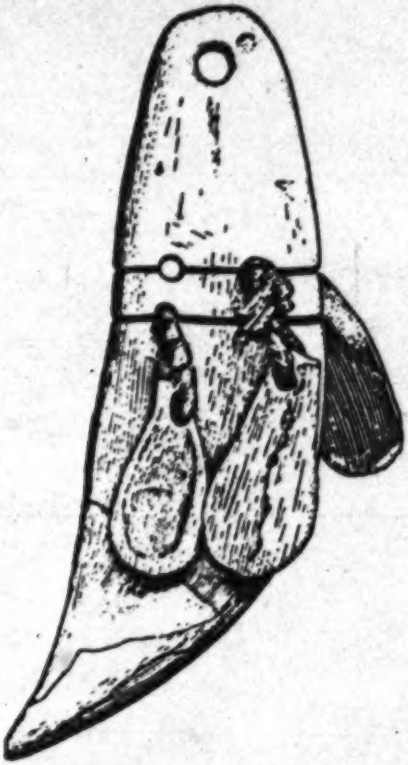

Figure 131. Lure of polar bear's tooth. IV.D.706. 3/2.

Gorges. Women, rarely men, caught a few trout and salmon with the gorge, which was merely a pointed bone wrapped inside the body of any small fish and attached by a line to the shore. Figure 132 is copied from a rough field sketch of a gorge used by a woman on Victoria Island. It was about 6 inches long, made from a splinter of caribou leg bone, and not distinguishable in any way from the needle used for stringing the salmon that were caught in weirs. I never saw a double-pointed gorge.

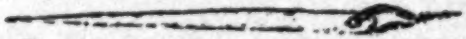

Figure 132. Bone gorge, for trout and salmon. 1/2.

Needles for Stringing Fish. Most needles used for stringing salmon at weirs were roughly shaped splinters of caribou leg bone (Figure 133), but in

one needle, 8 inches long, the splinter was mounted in a wooden handle. The line was of sealskin, generally closed at the far end with a stick of bone, antler, or wood to prevent the fish from slipping off. 227 237 [283]

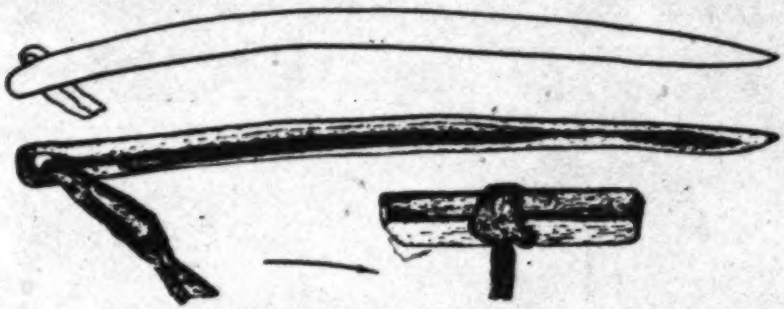

Figure 133. Bone needle for stringing fish. IV.D.461. Approx. 2/3.

Fish Bags. To pack their fish to camp the Eskimo used a bag of sealskin, commonly made by folding in the ends of a whole skin, doubling it over and tying a line to each end. The same bag, laced across, served as a dog-pack. 227 415 281 [492]

Fish Spears. Two varieties of fish spear were employed, the trident and the leister. The leister was preferred for spearing trout and salmon in lakes when they came to nibble at the lure, the trident for the migrating salmon that entered the weirs across streams; but generally a man used whichever weapon happened to be nearest at hand.

The shape of the leister is best seen from the illustration (Figure 134*a*). The handle was simply a long pole, split at the end to receive a barbed, occasionally barbless, point of antler, which was held in place with a lashing of sealskin, or more rarely of sinew. Two prongs facing each other, which sprang open on striking the fish, were invariably of copper or iron, copper, of course, being the original material; they were driven like nails into antler heads, which were bevelled off at the lower ends to fit corresponding ends on wooden extensions. Antler and wood were spliced with sealskin lashing, strengthened at times by bone or antler nails. The wooden extensions were then bevelled off in the same manner and lashed to the shaft, but not nailed, as low ridges at their tips prevented the lashings from slipping off. All these lashings quickly dried up from disuse, and the parts fell asunder except where they were held together by pegs. In a few leisters the side pieces were entirely of antler, not of antler and wood combined. 227 284 321 [325]

The trident (Figure 134*b*) resembled the leister, but had no prongs on the side pieces, which were made entirely of antler, pointed and barbed like the point in the middle. The number of barbs varied; in some cases they were directly opposite, in others staggered, both arrangements occurring at times on the same weapon. 227

Double-pointed spears were sometimes improvised for stabbing sculpins, or the small fish that hide under the stones on the margins of lakes. I have seen two sharpened pieces of bone, and even a European fork, lashed to the end of a walking-stick for this purpose. Naturally, they were dismantled again as soon as the need for them passed. [136] [177]

226 227 *Fish Rakes.* The fish rake was employed at the foot of a few cascades where the salmon congregated in such numbers that no art was required for their capture.

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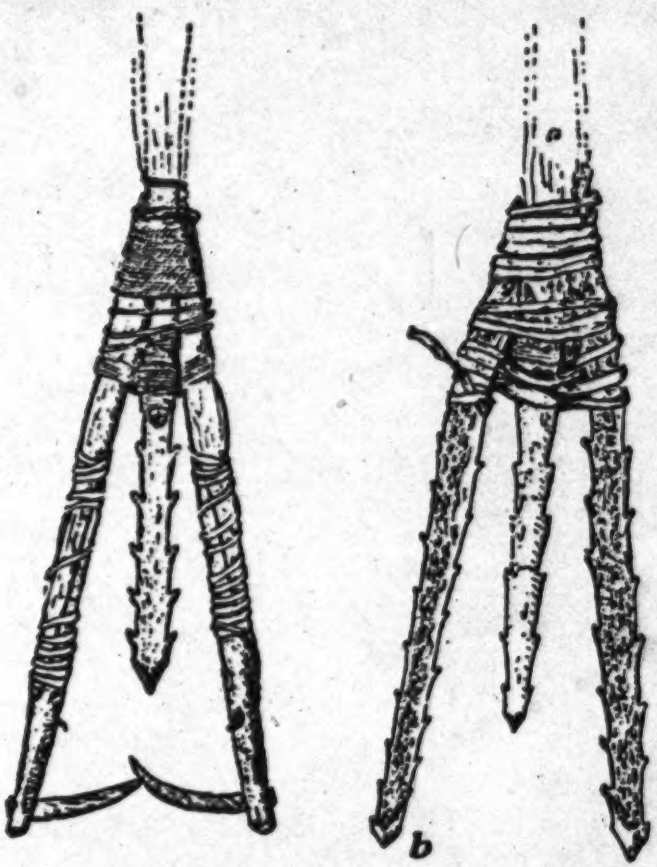

Figure 134. a, hister, IV.D.117; b, trident, IV.D.121. 1/3.

226 227 Hearne, the first traveller to observe it, described its use as follows:

"The salmon at Bloody Fall, on the Coppermine river, were so numerous that when a light pole armed with a few spikes, which was the instrument the old woman used, was put under water and hauled up with a jerk, it was scarcely possible to miss them. Some of my Indians tried the method, for curiosity, with the old woman's staff, and seldom got less than two at a jerk, sometimes three or four."[1]

[1] Hearne op. cit., p. 103.

The implement consisted of two long copper hooks driven through a piece of antler at the end of a pole 4 or 6 yards in length (Figure 135). The antler, bevelled off in the usual manner, was pegged to the shaft with bone or antler pins, and occasionally further secured by a sealskin lashing. The majority of

Figure 135. Fish rake with two copper prongs.
IV.D.431. 1/3.

Figure 136. Fish rake with one copper prong.
IV.D.393. 1/2.

Figure 137. Ice chisel, of copper set in antler.
IV.D.1283. 1/4.

rakes had two hooks from 6 to 9 inches long, but a few had three hooks and others only one (Figure 136). Wedges of bone, antler, or copper were sometimes used to prevent the hook from pulling out.

Ice Chisels. Figure 137 shows a typical chisel used to drill through ice for fishing, or to obtain drinking water. The blade is of copper, oblong in section, and bevelled to an edge on one of its narrower faces. The fore-piece is of

412 antler, trimmed in front like a collar, and whittled down at an angle behind to
321 fit a long wooden handle. In this specimen the handle was attached by two bone pegs (which are still in position), supplemented by a sealskin lashing. In other specimens, especially the smaller ones, there was only one peg, and occasionally none at all, if the owner wished to use the same handle on his ice scoop or other implements. Apart from the number of pegs there was little or no variation in shape.

412 For several years after iron became readily available some of the Eskimo
325 still preferred their old copper ice chisels, because in shallow lakes the edge was often dulled through striking against the stones on the bottom, and copper was easier to hammer and grind into shape again than iron. The Copper Eskimo
[321] had no recollection of bone or ivory ice chisels, though their harpoon carried a pointed butt of bone or antler for planting the weapon upright in the snow.

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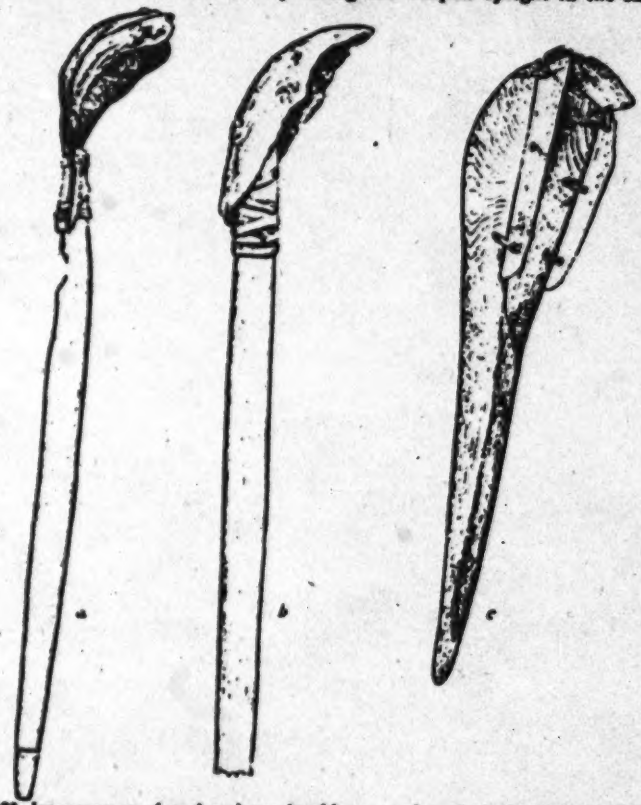

Figure 138. Ice scoops; a: of musk-ox horn; b: of bone; c: of wood edged with bone. IV.D.138, 179, 224. Approx. 3/10.

412 *Ice Scoops.* A common shape for the scoop used in clearing out the hole
321 made by the ice chisel is illustrated in Figure 138c, which shows a wooden ladle
322 with a "free-board" of bone attached by thongs of both sinew and sealskin
284 around the rim of the bowl. Some of the holes not filled with the lashing have been plugged with wood.

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Because many natives experienced difficulty in obtaining a piece of wood large enough to carve into a bowl, they often substituted a curved piece of bone or of musk-ox horn, lashed to a wooden handle. Specimens of these more or less makeshift scoops are illustrated in Figure 138, where *a* (IV.D.135) has a bowl of musk-ox horn, and *b* (IV.D.179) of bone. The handles of such scoops could be lengthened, if necessary, by lashing to the walking-stick or fish spear, for which purpose their owners often cut notches at the ends.

SEALING EQUIPMENT

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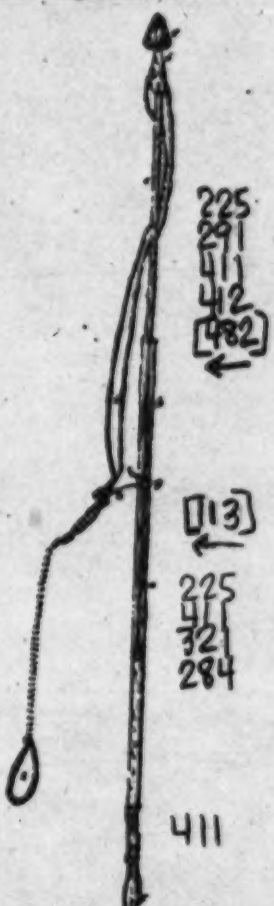
In the spring and autumn, when the seals were basking on the surface of the ice, Copper Eskimo hunters occasionally tried to crawl near enough to transfix them with their harpoons; but so slight were their chances of getting within range—unless perhaps in rough ice where there were sheltering hummocks—that most men never attempted the feat until they obtained rifles, which extended the effective distance for attack from 8 or 10 yards to 100 yards. Every man, on the other hand, and even some of the younger women, regularly tracked down the seals' breathing holes in the ice during the winter months and harpooned the animals when they rose to the surface. In midwinter, when the days were short, they started out for their hunting grounds half an hour before dawn, and did not return home until after dark. Their outfit was fairly standardized, though not always complete. Each man wore a long outer coat of thick caribou fur to protect his body from the cold. Sewn to the back of this coat was a bone button (*See* Figure 37) for the attachment of various tools, viz., a scoop to clear away the snow, bone skewers for closing the wounds in the seals, a toggle to drag them home, a spare harpoon head, and sometimes a foot-pad to protect the hunter's feet as he waited motionless, 1, 2, or even 3 hours, over the breathing hole. In his hand he carried his harpoon, the usual long, two-edged knife, and an "indicator" to warn him when a seal was rising to breathe; and from one wrist hung a special toggle that he attached to the trace of his dog. His method of hunting is described in "Life of the Copper Eskimos", Reports of the Canadian Arctic Expedition, vol. XII, pt. A, pages 112-114; here we need consider only the details of his tools and weapons.



Harpoons. The harpoon was roughly the height of a man, or from 5 feet 6 inches to 6 feet long; and it varied only in minor details (Figure 139). It contained essentially four parts—a shaft, usually of wood, but occasionally of two or more pieces of antler riveted and lashed together; a bone or antler (very rarely, copper) foreshaft that fitted into a hollow bone cap at the end of the shaft; a detachable head with a long hand line of plaited sinew;

Figure 139. Sealing harpoon. *a*: wooden shaft; *b*: bone socket-piece riveted to the shaft with copper nails; *c*: antler foreshaft; *d*: antler head; *e*: copper blade; *f*: antler butt; *g*, *h*: sinew from hand line tucked under the thong that runs along the shaft, the thong itself being held down at this point with a copper staple; *i*: hand line of braided sinew; *k*: grip of hand line. IV.D.694. 1/10.

225 and a pointed bone or antler butt for planting the weapon upright in the snow.
411 The butt was merely lashed to the end of the shaft with rawhide or sinew whip-
ping; but the bone cap at the other end was riveted with bone or copper pins
321 through two spurs that projected down the sides of the shaft, and the tapering
284 end of the foreshaft was firmly wedged into its hollow by a packing of skin or
fur. Through a hole drilled in the shaft just below the cap passed a sealskin
thong that ran tautly one-third, one-half, or three-quarters the length of the
shaft and was then knotted through another hole; it served, in conjunction
with a piece of sinew attached to the hand line, to hold the harpoon head
against the foreshaft. At the place where the sinew tucked under it, some
[414] hunters lashed the thong tightly against the shaft with a whipping of rawhide,
or held it down with a copper "staple".

225 All the Copper Eskimo harpoon heads I have seen had blades separate from
411 the head, although specimens of the old Thule culture, in this area as elsewhere,
sometimes have the blade and head in one piece. The older Copper Eskimo
harpoon heads were made of bone or antler, and the bone or copper blade,
shaped exactly like an arrow point, was invariably set horizontally in the same
plane as the line holes, and secured with a single rivet of bone or copper. The
butt of the head was cut aslant, giving a single sharp spur, and a circular hole
was drilled for the insertion of the foreshaft. Three of these old harpoon heads
are illustrated in Figure 140.

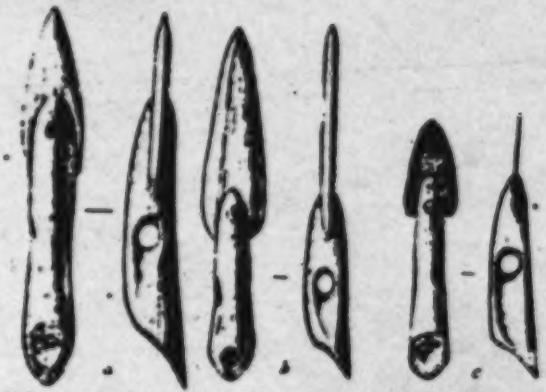


Figure 140. Old harpoon heads. a, b: bone blades; c: copper blade. IV.D.1636, 600, 1638. 1/2.

411 The introduction of iron did not change the type of the Copper Eskimo
225 harpoon head, but only its material. At first only the blades were of iron; the
heads proper continued to be made from bone and antler. By 1914, however,
325 nearly all heads had come to be of iron, or occasionally of brass, and what seems
177 to have been a new feature was introduced, a lengthening and bifurcation of the
butt, resulting in two, stout, chisel-edged spurs, which were themselves often
notched (Figure 141). This change we must probably ascribe to influences from
Hudson Bay, where the spur of the ordinary sealing harpoon head has been
bifurcated for several centuries. Among the Copper Eskimo every metal harpoon
head that came under my notice possessed this feature, but not a single bone or
225 antler one, except the specimen that will now be discussed.

411 Figure 142 shows a harpoon head without separate blade that was included
172 in a large collection of specimens brought back by Mr. Stefansson and labelled
114 Minto Inlet, Victoria Island. If it actually came from that district, it must

surely have been unearthed in some old ruin of pre-Copper Eskimo times, for it is identical with specimens that have been dug up in old dwellings in both Mackenzie Delta and northern Alaska. I rather suspect, however, that it came from one of these western areas, as did several other specimens in the collection that were certainly wrongly labelled.

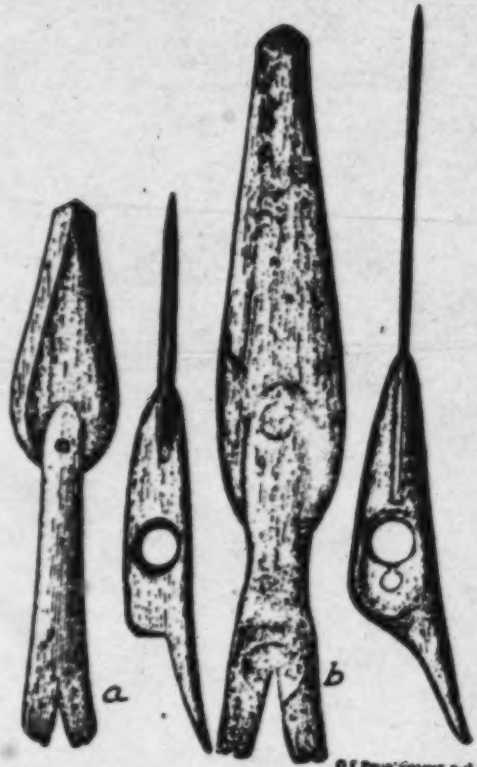


Figure 141. Modern harpoon heads with iron blades. a, IV.D.312, 1/1; b, IV.D.1034, 3/2.

Figure 142. Bone harpoon head. IV.D.1334. 1/1.

The line attached to the head of the harpoon averaged in length a little over 2 metres and was made of plaited sinew, of sealskin, or of both combined, some hunters preferring sinew for the grip, but, for the toggle end, a sealskin thong less liable to fray. All lines were double from the toggle nearly to the grip; and to one or both strands, about 3 feet from the toggle end, was tied a short piece of sinew, which tucked under the thong running along the side of the shaft and held the lower part of the line taut until the seal was struck, when it immediately slipped out of place.

When the line was of plaited sinew it was graded from an 8- or 16-ply weave down to a 4 or 6 ply. At times this was accomplished by twisting some of the strands together, a 12-ply line, for example, being combined in twos to make one of 6 ply, and this perhaps again to 4 ply; the two ends could be

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spliced, or fastened to a sealskin thong. More often, perhaps, there was a simple tapering of the line, the narrow end, after passing through the toggle, being

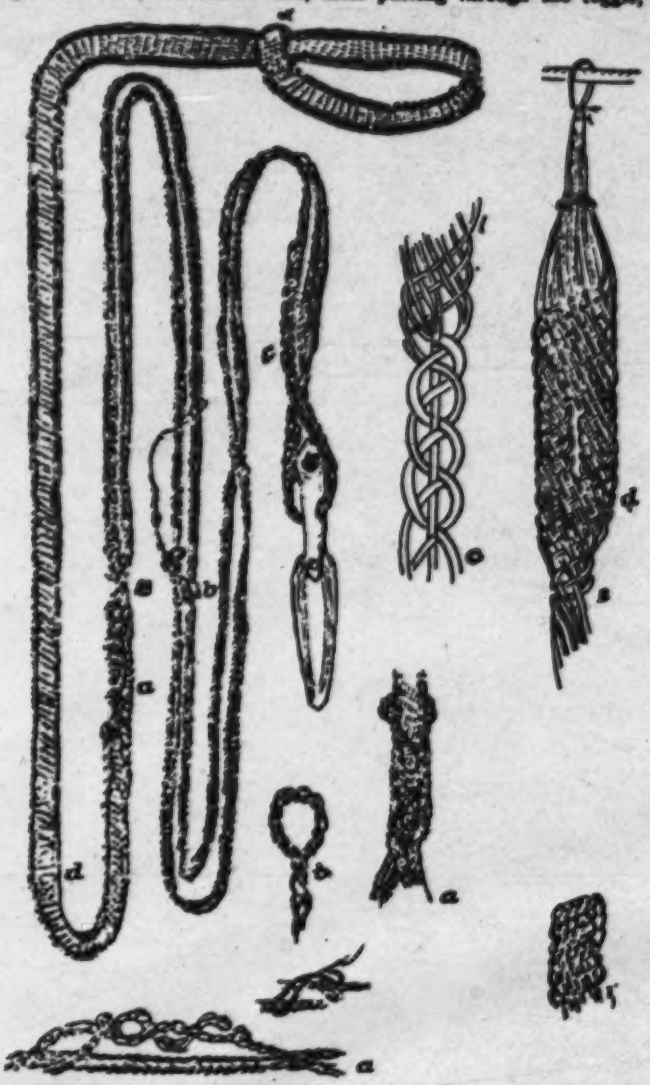

Figure 143. Details of a harpoon line made from plaited sinew. IV.D.209. 1/2.

joined back in various ways, occasionally by a simple knot. At the thick end, which the hunter held in his hand, was a running noose. The accompanying illustrations explain more clearly the details of construction (Figure 143).

Scoops. The scoop (*ilaun*) (Figure 144) used for clearing the snow from the breathing hole of the seal had an average length of 1½ feet, and was made of musk-ox horn, mounted on a handle of horn, bone, antler, or wood. The two parts were generally spliced with a V-shaped notch, rarely by bevelling the ends and overlapping; pegs of copper or bone, and lashings of sealskin or sinew, held them firmly together. A small loop enabled the tool to be attached to the coat button; usually it passed through two holes in the handle and the ends were either tucked under the lashings around the splice or knotted. The handle tapered to a rounded point with which the hunter stabbed the eye of the seal when it was drawn to the surface. 412 225 321 284

Figure 144. Scoop for sealing, of musk-ox horn. IV.D. 123. Approx. 1/4.

Indicators. The seal indicator and its use have been described in Reports of the Canadian Arctic Expedition, vol. XII, pt. A, page 113. Figure 145 illustrates the commoner type, the pencil of bone slightly more than a foot long, with the small bone disk at the bottom and the cord leading away to the needle that was pegged into the snow. Often, but not always, the top of the pencil, perforated for the cord, was made of a separate piece of musk-ox horn, neatly drilled, that fitted like a cap. During our residence in their territory a few natives experimented with indicators made, not from bone, but from the steel springs of some old rifle bolts; how effective they were I cannot say. 412 225 [321]

For drawing up this indicator a few sealers used a fine hook of copper lashed with sinew to a short bone handle; a specimen is shown in Figure 146.

Figure 145. Seal indicator. IV.D.1518. 1/3.

Figure 146. Hook for withdrawing indicator from seal-hole. IV.D.484. Approx. 1/2.

Report of the Canadian Arctic Expedition, vol. XII, page 113, describes also a less common "indicator" made from a strip of caribou leg sinew that was slit to hold a wisp of bird's down. Unfortunately I failed to collect a specimen of this object.

Foot-pad. In midwinter many sealers carried a small square pad of caribou fur, or preferably of polar bear fur, to place under their feet when watching over the seal holes. Like the wound pins and the scoop, it hung from the button at the back of the coat, whereas the knife and the seal indicator were usually carried in the hand with the harpoon. 225 [482]

225 415 412 321 *Skewers for Seals.* To hold his extra harpoon head, the sealer attached to the button on the back of his coat a small bag made from seal or caribou skin, or from the foot or neck of some waterfowl such as a loon or a swan. Around the outside of this bag he sewed a narrow band of skin into which he inserted three or four bone skewers for closing the wound in the seal, and one or more bone toggles with short loops for dragging it home (Figure 147). The skewers,

Figure 147. Bag for spare harpoon head, skewers, and toggles. IV.D.719. 1/2.

though knobbed at the end like the skewers used for caribou meat, usually had a slightly different shape; for the caribou skewers, which penetrated only the flesh of the animal, not its skin, were rounded down to the point, whereas the sealing skewers (Figure 148), which had to pass through the tough hide on both sides of the wound, were bevelled in such a way that they had at least two, and often four, cutting edges similar to those on a bone arrow head.

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Figure 168. Bone skewers for closing wounds in seals.
IV.D.719. 2/3.

Figure 169. Toggles for leading a dog.
IV.D.133. 1/2.

All sealers carried these bone skewers stuck in a strip of skin, but not all of them burdened themselves with a bag and a spare harpoon. Lacking the bag, they merely cut a hole in the strip of skin for slipping it over the coat button.

Toggle for Leading Dog. Figure 149 illustrates the usual toggle for leading a dog to the sealing ground. In principle it is the same as the toggle on the harness. The rigid parts are of bone, antler, or musk-ox horn; the cord and strap, of sealskin or caribou leg sinew. The broad loop hung over the sealer's wrist, and the small toggle buttoned into the loop at the end of the dog trace. There was no variation except in size, and no ornamentation.

Toggles for Hauling Seals. Toggles for hauling seals were indistinguishable from women's belt toggles (*See* page 50). Like most of the latter they were made of bone, antler, or musk-ox horn, nearly always the first, measured between 2½ and 4 inches from tip to tip, and had the shape of a crescent that tapered towards each end. Two ends of a short cord of sealskin, or more usually of plaited sinew, were passed through the hole and knotted to form a loop (Figure 150). The sealer threaded the toggle through a hole in the seal's mouth, passed it back through the loop and attached it to the trace of his dog, which then dragged the carcass home.

Sealing toggles, like other bone implements, were often ornamented with incised lines. These will be discussed in another place.

Figure 150. Toggle for hauling seals. IV.D.197. 1/2.

LAND HUNTING EQUIPMENT

Bows and Arrows

Most bows were made from three pieces of spruce wood, a middle piece and two "horns," joined together with the usual "cleft" or V splice (Figure 151*b*). Bows made from a single piece of wood were comparatively rare (Figure 151*a*), though one, owned by a 6-foot Tree River native, was stronger than any of the three-piece weapons. From the eastern end of Coronation Gulf came a few bows built up from musk-ox horn, caribou antler, or both materials combined (Figure 152), indicating a dearth of suitable wood in that region. In one of them, two pieces of musk-ox horn have been joined wth a cleft splice, but elsewhere in this bow, and in all other bows of horn or antler, the makers have used the less difficult scarfed splice, and strengthened it in places with copper or iron rivets. A few wooden bows have scarfed joints also, but they are mostly small weapons for women and children.

Because dry spruce has little tensility and easily fractures, every bow was strengthened with a score or more strands of braided sinew[1] that extended along the whole back and passed around the nocks (Figure 151). Some hunters

[1] One bow, a small one for a woman or child, has thongs of rawhide, presumably from want of sinew.

411 284 [237]

combined them into two or three cables, or wound a sinew or rawhide cord around them to keep them from slipping over the edge. Strips of sealskin beneath them checked fraying, and lashings of sinew or of rawhide at the grip and joints held them firmly against the wood. Over each of the two weak places

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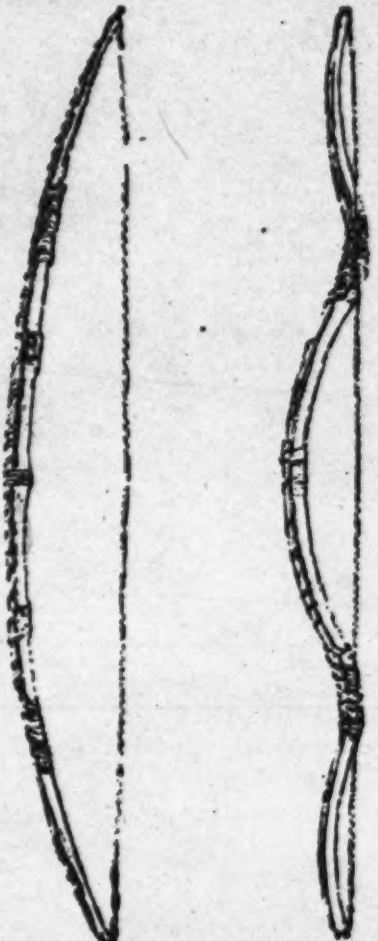

Figure 151. Two bows, one made from a single piece of wood, the other from three pieces. IV.D.72, 1278. 1/8.

Figure 152. Bow made from musk-ox horn and antler. IV.D.1789. Approx. 1/8.

411 284 [322]

in the bow, the joints, most hunters lashed a plate of wood, bone, or antler, and some added another plate on the under side (Figure 153). As many bows were of inferior wood that required strengthening in various places, the lashings and splices on one weapon seldom corresponded exactly with those on any other. The main strength of all of them, however, lay in the back lashings, which were

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284 secured to the wood by a complicated series of half hitches, well illustrated by Murdoch.[1] As these back lashings slackened with frequent tension and changing
[461] weather conditions, the owner wedged little plaques of wood, skin, or bone

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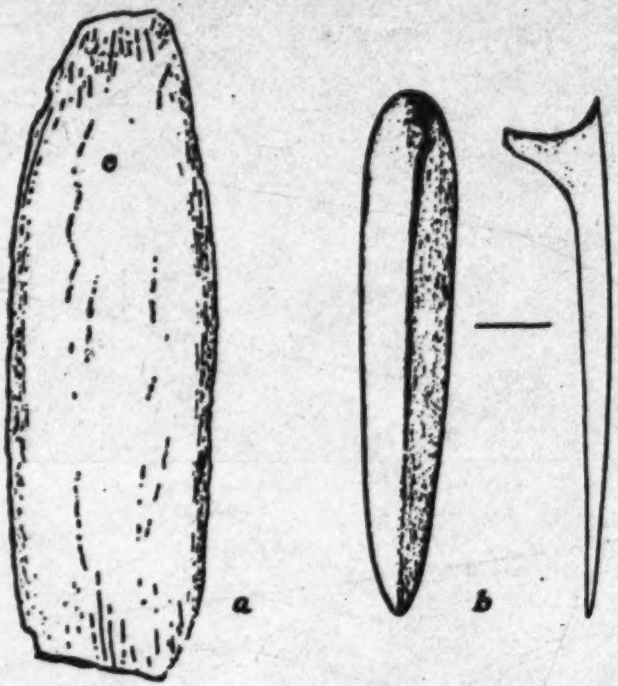

Figure 153. Braces to strengthen the joints of a bow. a: musk-ox horn; b: bone. IV.D.706, 602. 1/1.

beneath them (Figure 154), and when plaques no longer sufficed, he removed the lashings altogether and rewound them, an operation that he could perform in about an hour. Defects in the horns were more serious, but not insuperable. I
[461] have seen a native strip a bow down to the bare wood, fit it with two new horns, and relash the weapon ready for use in the space of 4 hours.

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Figure 154. Plaque of rawhide, wedged under the back lashings of the bow. IV.D.79. 1/1.

The bowstring was made from five or six strands of sinew, twisted together. When stringing his weapon, the hunter sat on the ground and pushed the middle of the bow from him with his foot while pulling the horn towards him.

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When the party of Indians with whom Hearne travelled in 1771 massacred some Copper Eskimo at Bloody Fall, near the mouth of Coppermine River, Hearne noticed that most of the Eskimo arrow heads bore triangular points of a slate-like stone, whereas the remainder had points of copper.[2] The Copper Eskimo we encountered were using only points of antler, bone, cop-
[113] per, or iron.

[1] Murdoch, John: A Study of Eskimo Bows in the U.S. National Museum; Report of the U.S. Nat. Mus., 1894, figs. 6-16.

[2] Hearne: op. cit., p. 103.

per, or iron. They claimed that their forefathers had never used points of stone and ascribed such specimens as they picked up in their country. (See Figure 155) to a still earlier people. Thus, it would seem that in the short space of 100 years stone points had passed out of both use and memory.

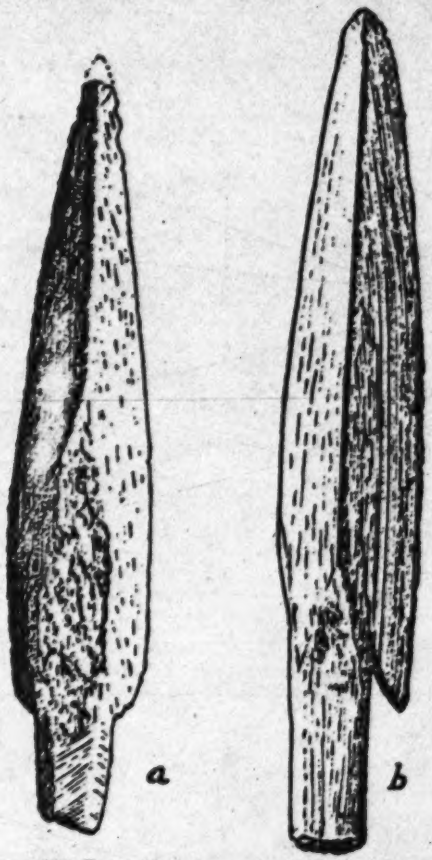

Figure 153. Two rubbed stone points picked up on the surface of the ground in Coronation Gulf. IV.D.607, 1627. 1/1.

Figure 154. Arrow head with rubbed slate point, found on Victoria Island. IV.D.1819. Approx. 1/2.

In 1939, Mr. Lincoln Washburn presented to the National Museum of Canada two old slate-pointed arrow heads that had been picked up on Victoria Island.[1] The points were wedged without rivets into rather flat antler foreshafts, one being at right angles to the axis of the shaft, the other parallel with it. Each shaft bore a single barb and terminated in a sharp tang that seemed to lack knobs, but one shaft had been made from two pieces of antler deftly

[1] He added the information that near Holman Island, at the entrance to Prince Albert Sound, is an outcrop of a slate rock that the natives assert was once used for arrow points and knife blades.

411 scarfed and spliced together with three copper rivets (Figure 156). Both were
324 deeply encrusted with lichens, and were evidently of considerable antiquity.
321 Probably they were made by ancestors of the present-day Copper Eskimo. On
the other hand, it is not at all impossible that they are arrow heads of the
172 earlier "Thule"-culture inhabitants who have left other remains in the region.
The use of copper rivets does not rule out this possibility, because copper-bladed women's knives with typical "Thule" handles have been recovered from an old stone house on Victoria Island and from a stone grave on the neighbouring Read Island, along with harpoon heads and other objects of typical Thule
[325] (North Alaskan) types. There are good grounds for believing, therefore, that
[174] the ancient Thule population itself used the local deposits of copper and passed on its knowledge to the ancestors of the present-day Copper Eskimo when the latter migrated into the area.[1]

411 In 1914 arrows with long antler points that fitted directly into the wooden
321 shafts were fairly common; some had no barbs, others one or more along one
325 side. Much more common, however, were arrows with separate blades of bone, copper, or iron that riveted into antler foreshafts, or were provided with long shanks that took the place of foreshafts. Points of bone were rare; about 65 per cent were of copper and the remainder of iron, hammered into the same shapes as the copper ones. These shapes, and also the methods of splicing the wooden shafts when made of two or more pieces, have been rather fully illustrated by Stefansson.[2] Individuals may have preferred one type of point to another for certain game, but so far as I could discover they used all types more or less indiscriminately.

411 The Copper Eskimo used the Mediterranean release, holding the bow
237 almost horizontal. They generally feathered their arrows with goose, loon, eider duck, or snowy owl quills, but did not disdain quills from other birds. Normally, two feathers only were used on each arrow, but occasionally three, for no special reason that I could discover. The hunter cut off on his trimming board all the barbs along one side of the feather, smoothed the rough quill with his knife, grooved the arrow shaft with the special tool for that purpose (or, if he lacked this tool, split it slightly with his knife), and lashed the two ends of the feather in the grooves with caribou sinew. This was the usual way of feathering. Occasionally, however, he merely trimmed the barbs a little on both sides and fastened the feather flat against the shaft. There was also a third method, in which two half feathers, i.e., feathers from which the barbs on one side had been removed, were lashed around the end of the shaft spirally, end to end, and the barbs spread fanwise. I saw a man feather an arrow for his young stepson in this way and was told that it was a rare method, never employed on arrows intended for serious use.

Bow-case, Quiver, and Tool Bag

411 The bow-case (Figure 157), which was made of sealskin to keep out water,
415 was shaped to the form of the weapon; one end was closed, the other left open
281 for some distance down its curved edge to permit the insertion of the bow. To close the opening when the bow was in place there was a short cord of plaited sinew whose loose end was tucked under the lashing, leaving the tip protruding so that it could be unfastened at a single jerk. A quiver with or without a cap was sewn or buttoned to the straight edge of the case; and a tool bag was also sewn to the case in such a way that the quiver, when carried on the back, lay on top of it and prevented its contents from falling out. Often, too, there was a sheath

[TEXT CONTINUED ON PAGE 128]

[1] Mathiassen found a little copper in the old Thule site at Nasyan, on the west coast of Hudson Bay (Reports of the Fifth Thule Expedition, vol. IV, pt. 1, pp. 14, 16 (Copenhagen, 1927)); and Graham Rowley discovered a small copper hook in a Dorset culture site near Iglulik, some 200 miles farther north. So far as we know today, this copper could have come only from the Coronation Gulf region.

[113] [2] Stefansson, V.: Anth. Papers, Am. Mus. Nat. Hist., vol. XIV, figs. 22-28 (1913).

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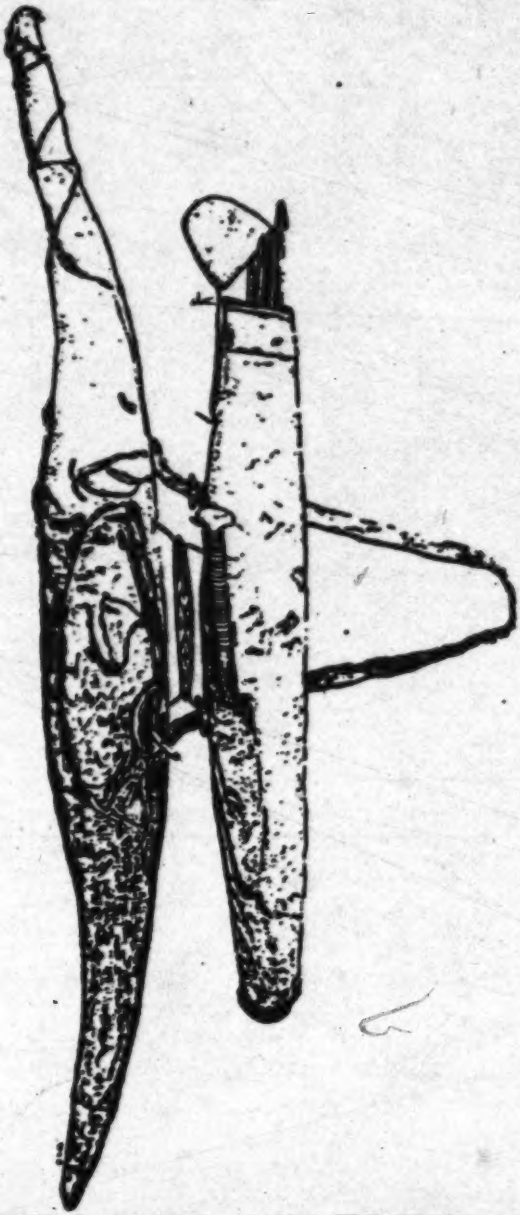

Figure 127. Bow-case, quiver, and tool bag. IV.D.1457. Approx. 1/12.

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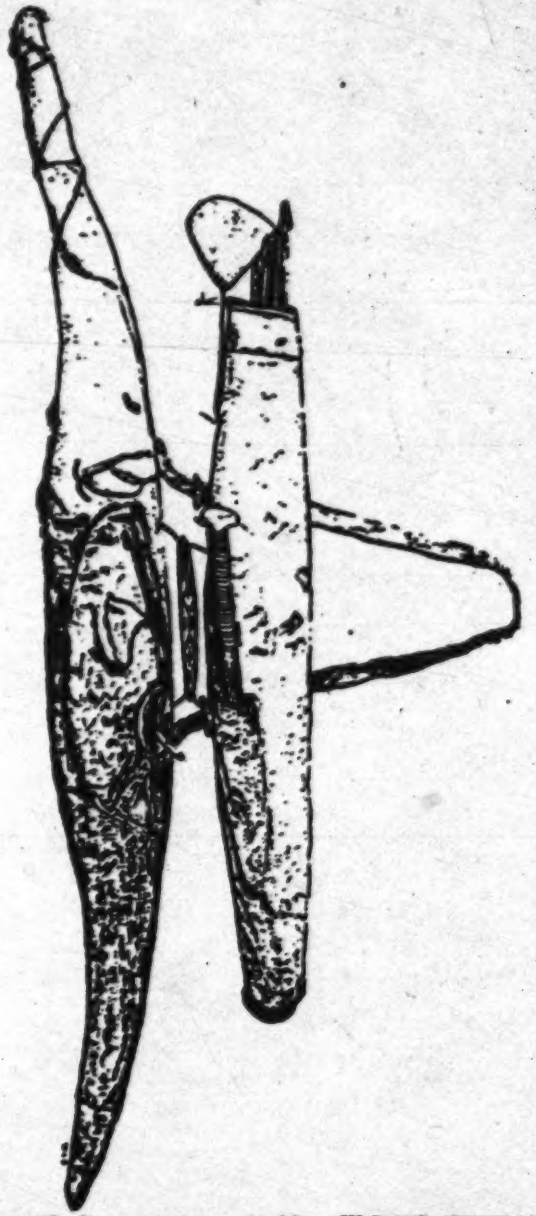


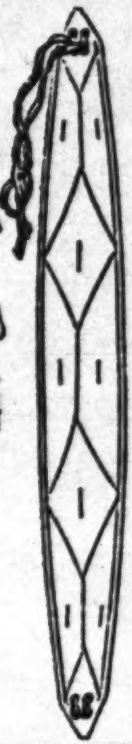
Figure 157. Bow-case, quiver, and tool bag. IV.D.1457. Approx. 1/12.

411 for the snow knife, which served also as a hunting knife, sewn to either bow-
415 case or quiver. The carrying strap was attached by sewing or with toggles to
28 the same edge of the bow-case as the quiver, so that the two would lie together;
in fact, the ends of the strap often served to unite them.

41 Bow-case, quiver, and tool bag, when fully equipped, carried on their surfaces nearly a dozen bone toggles and needles whose forms and uses require some explanation. Other objects might be attached for temporary convenience, but they were not standard equipment.

411 414 When the carrying strap, which passed across the chest and around the upper arms like the regular pack-strap, was not sewn directly to the bow-case, it buttoned to two toggles of the standardized shape, illustrated in Figure 160*a*. There was also a long, flat handle, *nerumiarvik*, lashed to the straight edge of the bow-case so that it could be carried in the hand. This handle varied in size according to the size and weight of the bow and quiver, its average length being about 8 inches; the shape never varied, however, except that the ends were sometimes pointed instead of rounded. The flat surface lent itself to ornamentation, and most bow-case handles were decorated with a more or less fixed design[1] (Figure 158).

[192] [531] 414 224 A toggle similar to those for the carrying strap was occasionally sewn on the side of the bow-case for the attachment of a short board. I failed to procure any specimen of this board, but Figure 159 reproduces field sketches of two that I saw in actual use. Each was about 16 inches long, but one was made from one solid piece of wood, the other from two smaller boards lashed together. The toggle on the bow-case passed through the slot in the middle. In the hunting field the Eskimo planted two walking-sticks in the ground, fastened these boards to their ends, and stationed two children to twirl them, or to beat them with a stick, so that the frightened caribou would not break away from the line of the drive and escape the concealed hunters.[2] The board had two names, *kivyalun* and *aulaqotit*, "driving instrument".



[192] Figure 158. Bone handle of bow-case. IV. D. 192. 1/2.

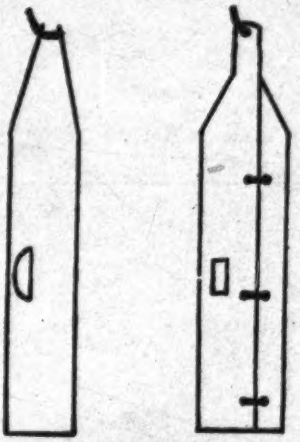


Figure 159. Field sketch of two boards used for frightening caribou. Approx. 1/6.

411 414 The quiver was sometimes sewn to the bow-case, sometimes attached by means of small toggles of varying shapes, one type being shown in Figure 160*b*. A similar toggle on the face of the bow-case buttoned over the handle of the snow knife to keep it from slipping out of its sheath.

[192] Somewhere on the outside of either quiver or bow-case were two small bone "wings", from 2 inches to 3 inches long, of standardized shape, for pinning through the wings of

[113]

[1] The specimen figured in Stefansson, Anthropological Papers, Amer. Mus. Nat. Hist., vol. XIV, pt. 1, p. 50, called a "pull for Cord used in hauling Seals", is a bow-case handle.
[2] See Report of the Canadian Arctic Expedition, vol. XII, pt. A, fig. 60, p. 151.

small birds, principally ptarmigan; hence these toggles were called *aqargiqiutit*: "ptarmigan appliances" (Figure 161).

A bone or musk-ox horn handle (*neruminiaq*), fitted with a short strap of plaited sinew (Figure 162), was sometimes kept in the tool bag, but more often looped through some hole on the outside of the quiver or bow-case, or attached in some other way. Usually about 10 cm. long, of standardized shape, it was often grooved to fit the fingers in the same way as the blubber pounder and the whittling knife. This handle served on occasion to carry any small bundle, but was principally used for carrying the head of the caribou, or the bag containing its blood. From the latter use it acquired a second name, *auqtun* or "blood carrier".

Figure 160. Toggles sewn to bow-case. *a* for attaching the carrying strap, *b* for attaching the quiver. IV.D.1053, 91. 1/1.

The tool bag was often closed by lacing, for which purpose one end of a short cord of sinew was attached to the edge of the bag, and the other end to a small bone needle with which it could be threaded through the holes. When completely furnished, it contained the following articles.

Two marline-spikes for the bow lashings; two twisters for the bow lashings; one or more spare wedges to go under the lashings; feathers for the arrows, kept usually in a small bag of marmot or other skin; a small board for trimming the feathers; a grooving tool for attaching the feathers; a little caribou back sinew for lashing the feathers, splicing the arrows, sewing rents in clothing, etc.; spare parts of arrows for repairs; bone skewers for the carcasses of game; bone pins for the bag that contained the caribou blood; a wrist guard; a drinking tube; a needle-case and needle; a mattock for making a hunting pit (if too large for the tool bag this was carried in the quiver or even in the bow-case); an arrow straightener.

Very few tool bags, however, contained all these articles. The natives nearly always hunted together, and the deficiencies of one bag could be supplied from another. On the other hand, the tool bag often contained other articles, such as the whittling knife and the graver for cutting bone, which were more usually stored in a special tool bag at home, with the adze and the bow-drill. The bow adjuster, being large and cumbersome, was also left in camp.

Marline-spikes. Marline-spikes (Figure 163), which averaged from 6 inches to 10 inches long, were made of caribou or musk-ox bone. Some closely resembled marrow spatulæ and, at times, were actually used for extracting marrow, but their larger size, heavier construction, and the small hole below the handle instead of at the extreme end distinguished them from the ordinary spatulæ. This hole enabled them to be lashed in pairs, because two were required to unfasten and tighten the back lashings of the bow. One cord often fastened together the two marline-spikes and the two twisters, which also went in pairs. The handles of marline-spikes were frequently grooved for the fingers on one edge, and sometimes on both. Ornamentation, however, was rare, and when it did occur, consisted merely of a few incised lines or the ring-and-dot pattern.

Figure 161. Bone toggle attached to either bow-case or quiver for pinning through ptarmigan wings. IV.D.1029. 1/1.

Twisters. The twisters (Figure 164) were much shorter than the marline-spikes to which they were usually attached, although they were made of the same material, and also used in pairs. All had the same unvarying shape, a flattened

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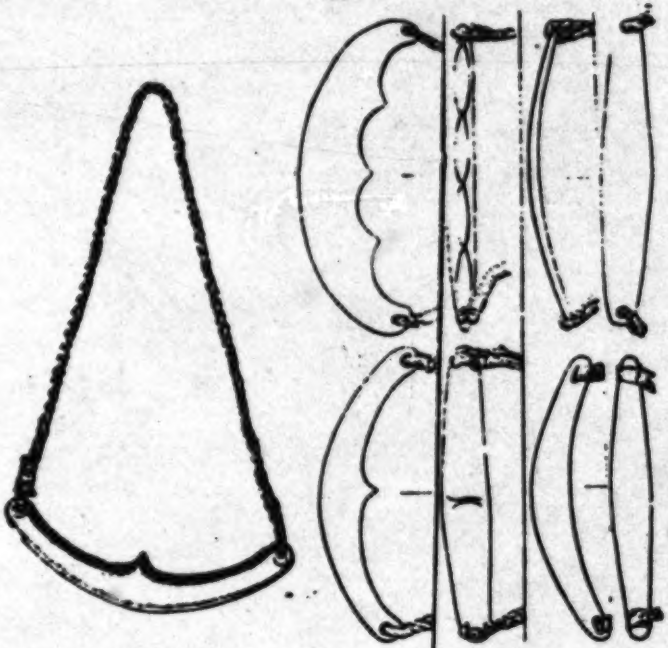

Figure 162. Bone handles for carrying the head of the caribou, or the bag containing its blood. IV.D.340, 198, 1438, 1869. 1/2.

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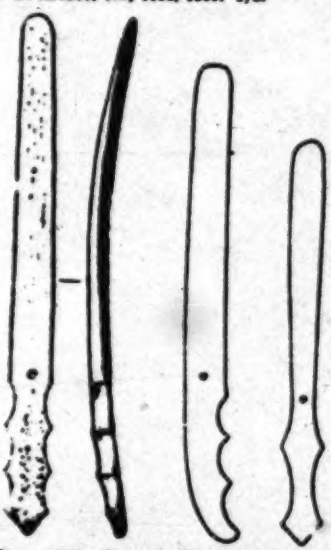

Figure 163. Bone marline-spikes for the bow lashings. IV.D.1508, 1229, 1510. 2/3.

Figure 164. Bone twister for the bow lashings. IV.D.1268. 1/2.

stick 4 inches or so in length turned up at the ends in contrary directions, and with a small hole in the middle to lash them together. No ornamentation was observed on any of these implements. 412 321

Wedges. Figure 154 shows a typical wedge, a flat square of wood, bone, or rawhide for inserting under the back lashings of the bow. Some had holes through the middle so that they could be tied to the bow-case. 412 237 [284]

Figure 165. Wooden board for trimming arrow feathers. IV. D.163. 2/3.

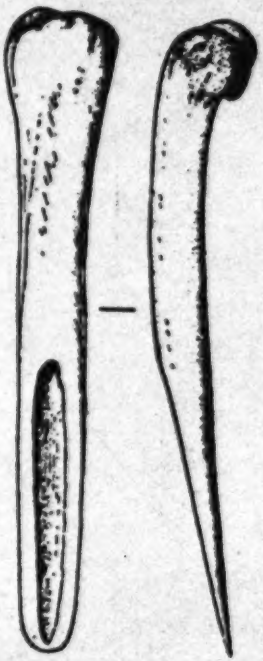

Figure 166. Bone instrument for feathering arrows. IV.D.1623. 1/1.

412 [322] [321]

Board for Trimming Feathers (Figure 165). Any flat piece of wood served for trimming the feathers. The board in the tool bag was usually from 4 inches to 5 inches long and from 1 inch to 2 inches wide. [322]

Grooving Tool. The grooving tool for attaching the feathers to the end of the arrow shaft was generally the hollow wing bone of a large bird bevelled off at one end like a chisel (Figure 166). Hunters who lacked a proper grooving tool sometimes used the marline-spike. [321]

Spare Parts of Arrows. These consisted of broken shafts and heads that could be used in mending; scraps of bone or antler, and pieces of copper, to be worked up later into arrow heads. 411

Bone Skewers. The Copper Eskimo hunter had two sets of bone skewers, one for pinning up the carcass of the caribou, the other for closing the harpoon wounds in seals. It was only the former, which were usually a trifle longer and of slightly different shape, that he carried in the tool bag on his bow-case. Most of them were fashioned from caribou leg bone, and resembled rounded pencils 412 414 321

412 414 321 about 6 inches long that tapered to rather blunt points, and had rounded or conical knobs at their heads so that they could be fastened together in pairs, either tied with sinew or, more often, pushed through holes in a small strip of sealskin. If knobs were lacking, small holes were drilled for tying them together (Figure 167).

412 414 32 224 [415] *Bone Pins* (for the blood bag). The hunter generally collected the blood of the caribou in the reticulum of the stomach, which is shaped like a pouch. To close this pouch he carried in his tool bag two or three thin round pins of bone, rarely of wood, that ranged in length from 2½ inches to nearly a foot. The points were usually rather sharp so that they would penetrate the reticulum without tearing a large hole; and the heads were shaped in various ways, so that many blood pins were indistinguishable from the needles used to lace together the front of a tent (Figure 168). Some were quite plain, others had small knobs or were bevelled off like a marrow spatula; but a favourite form had two or even three projecting points, which were useful for keeping the mouth of the bag open when pouring the blood into it. Many hunters fastened their pins in pairs, like the meat skewers, the twisters, and the marline-spikes. A man who had no pins, tied inside the mouth of the blood bag a wooden plug such as is shown in Figure 169.

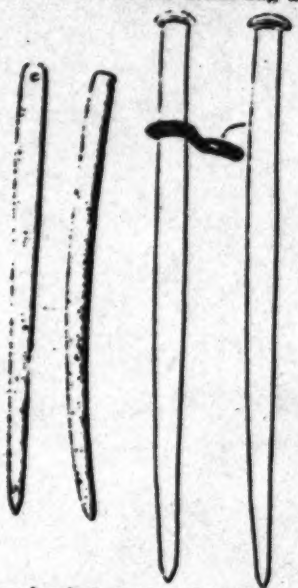

Figure 167. Bone skewers for pinning up a caribou carcass. IV.D.498, 1338. 1/2.

411 [531] [91] *Wrist Guard.* Archer's wrist guards (Figure 170) seemed to be universally of bone, and never to vary from an oval outline. The fine carving and engraving that appears on wrist guards east and west of this area was unknown to the Copper Eskimo, where one specimen was typical of all.

415 237 *Drinking Tube.* The drinking tube, though normally carried by the hunter only, was used by his entire family when travelling overland in summer with all its possessions. It was simply the hollow leg bone of some bird, usually a swan, not ornamented or marked by any special features. Many were indistinguishable from the needle-cases often found in the same tool bag (Figure 171).

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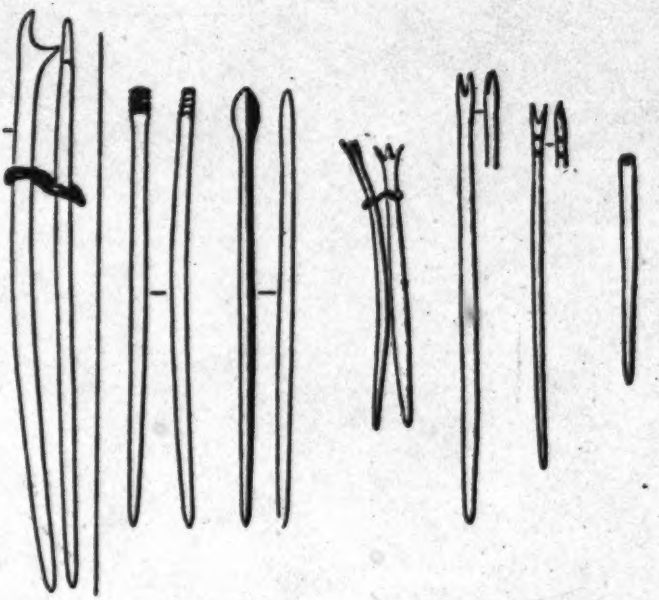

Figure 168. Bone pins for fastening the blood bag. IV.D.1648, 830, 221, 222, 1363, 1617, 690. 1/2.

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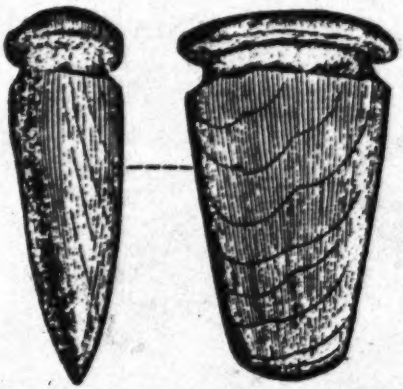

Figure 169. Wooden plug for closing the blood bag in the absence of a skewer. IV.D.1651. 3/4.

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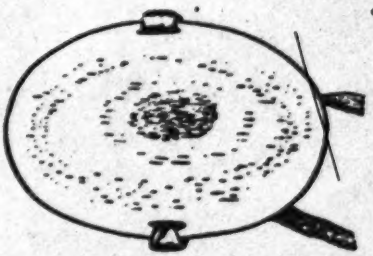

Figure 170. Archer's bone wrist guard. IV.D.306. 1/1.

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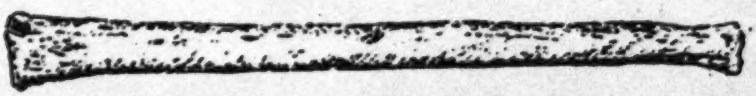

Figure 171. Bone drinking tube. IV.D.824. 1/1.

000

Needle-case (*See* page 90). Rarely, as in Figure 157, this was attached to the bow-case.

Mattocks (*See* page 104).

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Figure 172. Arrow straightener. IV.D.216. Approx. 2/3.

Arrow Straightener and Bow Adjuster. Arrow straighteners are shown in Figures 172 and 173. Invariably they were made from bone or antler, and the hole through which the arrow shaft passed was bevelled at front and back. There was considerable variation in the shape of this hole; in some specimens it was almost circular, in others triangular; but the lozenge form so characteristic of North Alaskan arrow straighteners seemed conspicuously absent. The specimen shown in Figure 173 is remarkable because its owner, by making the hole rectangular and slightly hollowing the front two corners, adapted his tool for straightening two shafts at the same time. In another specimen the hole is highly polished, suggesting that the implement may have served also for smoothing rawhide thongs. However, I never saw an arrow straightener employed for that purpose, although the Copper Eskimo, unlike their kinsmen in Hudson Bay, did not possess a special tool for smoothing thongs.

Figure 173. Arrow straightener, of antler. IV.D.138. Approx. 2/3.

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The bow adjuster (Figure 174) resembled the arrow straightener, but was necessarily much larger and for that reason made of wood. The slot was always rectangular, and it was bevelled on opposite sides, and on both faces, to produce

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two sharp edges, one of which was slightly higher than the other. One specimen had two slots, the lower more worn than the upper; probably the upper slot had proved unsatisfactory and the wood was large enough to permit a second. I have seen the Eskimo use this tool to adjust the horns of the bow, but it may conceivably have served also to regulate the curvature of the centre piece.

Figure 174. Bow adjuster, of wood. IV.D.34. Approx. 1/2.

Lances

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Lances, which were used only for spearing caribou from the kayak, closely resembled one type of arrow. The long tang of the triangular copper blade was driven into a head of bone, or more usually antler, which was split at the base to form a socket for the end of the wooden shaft, and secured by copper rivets. A specimen is shown in Figure 175.

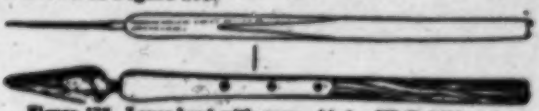

Figure 175. Lance head with copper blade. IV.D.1626. 1/4.

[224]

Besides the regular caribou lance, the natives often improvised crude lances for spearing marmots in their holes, and threw them away when the occasion passed. Figure 176 illustrates the head of one of these marmot lances made of antler; in use it was lashed to a walking-stick. The natives called it indifferently a "hook" (*nigsik*), or a "lance" (*kapuan*).

[192]

Figure 176. Crude bone point for spearing marmots. IV.D.378. 1/1.

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The Copper Eskimo encountered bears so seldom that they did not develop any special weapon against them. Because they dreaded to meet the barren-ground grizzly at close quarters, they shot it with their bows and arrows; but against the polar bear they improvised lances by lashing their two-edged snow knives to long poles.

Sling and Bolas

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Though children occasionally flung stones at birds with their tump-lines, the Copper Eskimo, strictly speaking, used neither the sling nor the bolas. They claimed, however, that both weapons were current among the inland Eskimo far to the southeast.

CHAPTER V

MISCELLANEOUS

493 *Sleds.* Copper Eskimo sleds had neither side pieces nor handles, but consisted merely of two stout runners joined by a number of crossbars. They averaged in length 14 or 15 feet, but some measured over 20 feet and others [499] less than 4. Sleds under 10 feet in length, however, were rather uncommon; being too short to carry all the household furniture, they served for short trips only, for transporting goods to and from the caches, and, when the family was blessed (or cursed) with many possessions, for relieving the main sled of part of its load.

493 313 [437] The most important parts of a sled were naturally the runners, for suitable logs seldom drifted up on the shores and the forests lay many days' travel to the south. Consequently, both single runners and the completed sleds were valuable articles of trade, current from one end of the country to the other, and natives from remote districts made long journeys to the spruce woods on Coppermine River to manufacture sleds for themselves. Under these conditions, one neither expected, nor could I find, any significant differences in size or shape between the sleds of different districts. One typical of several that I measured had the following dimensions:

	Ft.	Ins.
Length	16	1
Number of crossbars	14	
Breadth between runners	1	8
Width of runners at top		2½
Width of runners at bottom		2
Height of runners		10
Thickness of bone and mud shoeing		2

493 321 The runners of this sled had been shod with bones from a whale that drifted ashore near the eastern end of Dolphin and Union Strait; but the great majority lacked both this bone shoeing, and the shoeing of decayed driftwood that has been described by Stefansson,[1] though it escaped my own observation.

493 823 The same writer says that "In the fall, when the sled is to be used sod is cut in strips as long as convenient and about three inches thick and four inches wide. Lengthwise, along the flat side of these is cut a groove the width of the sled runner and the sod is put under the runners as shoeing. With a little water these are securely frozen to the bottom of the runners, the fuzz of the half-decayed wood holding them securely. The bottom of the runners is then rounded off with an adze or knife so the sod takes the form of a longitudinally bisected cylinder."

[114] I myself did not see this method of cutting and attaching the mud. The natives with whom I travelled on Victoria Island in the autumn of 1915 dug up their mould with mattocks, shredded it inside their snow-huts to remove the roots (which would tend to produce cracks), mixed it with water, and kneaded it into soft balls, each rather larger than a baseball, which they laid along the bottoms of the runners, kneaded together, and smoothed, first with their hands, then, after the mud had frozen, with their snow knives. A few weeks later they patched this shoeing in exactly the same way, after it had been chipped by sharp upstanding stones during their overland journey to the coast. Thenceforward it lasted throughout the winter, although every time a sled was used

[1] Anth. Papers, Am. Mus. Nat. Hist., vol. XIV, p. 30.

its owner streamed water over the mud to produce the thin coating of ice that reduced friction to a minimum.[1] By the end of April, however, it required protection from the growing warmth; the Eskimo, therefore, draped the sunward sides of their sleds with skins when in motion, and piled snow over the runners when at rest. In May even this protection failed them; gradually the mud melted and fell away. 493 823

The tops and bottoms of the runners were roughly parallel except in front, where the bottoms curved upward like a ski. Spaced about a foot apart were the flat crossbars, each lashed down at the ends with a rawhide thong that passed two or three times over the bar and a corresponding number of times through a hole in the runner below. To the front crossbar was attached also the toggle that bore the strain of the traces, a "new-moon-shaped" object of musk-ox horn, slotted in the middle and suspended between the runners by means of a belt of stout rawhide, preferably from the skin of the bearded seal (Figure 177); each end of the belt passed from the inside through a special hole in the runner below the front crossbar and then "button-holed" over the projecting end of that bar. There seemed to be no variation in the shape of this sled toggle, nor did I see any that were not made of musk-ox horn, which indicates that the animals were comparatively numerous a few years ago within the territory of the Copper Eskimo. 493 321 [284] [136]

Figure 177. Sled toggle, of musk-ox horn. IV.D.181. Approx. 1/4.

In the late spring and early summer, when a sled was difficult to drag over the numerous patches of bare ground, the Copper Eskimo commonly substituted the skin of a seal or polar bear, which glided with much less friction over soil and stones. In the autumn, again, before recovering the sleds they had abandoned late in the spring, they sometimes fashioned runners from skins, which they held in shape with fillings of willow branches and ice, and equipped with crossbars in the usual manner. On one occasion a native even used a block of ice for a sled; he merely rounded the bottom a little and grooved the front end for the attachment of his trace. 493 237 [823]

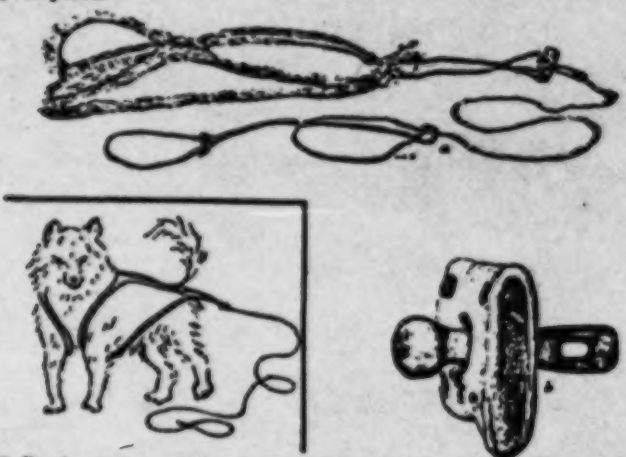
Two Eskimo who travelled from Backs River to our station in the winter of 1915-16 dragged sleds that were longer, narrower, and with lower runners than any I saw among the Copper Eskimo, but in all other respects seemed identical. One of them had a square sail of dehaired caribou hide mounted near the front to take advantage of the favourable wind; this, of course, was not an aboriginal invention, but reflected the influence of Europeans. [171] [177]

Sleds rarely carried any ornamentation. We observed only two instances, both of which consisted of a simple Y pattern painted in red and black on the sides of the runners where they began to turn upward. 493 531

Harness. Like other Eskimo previous to European contact, the natives around Coronation Gulf hitched their dogs to the sled fanwise, with individual 492

[1] See Reports of the Can. Arct. Exped., vol. XII, pp. 196, 198. The Copper Eskimo never mixed blood with the water, or used blood alone, as was commonly done by their neighbours further to the east. [171]

492 [281] traces 15 to 40 feet long that looped over the sled toggle and could all be released simultaneously. The harness, shaped as in Figure 178a, was of skin, nearly always the leg skins of the caribou with the hair left on. The loops that passed around the dog's forelegs joined across the shoulders and again below the throat, usually by short yokes, to produce a loop for the head. Two strips of skin then ran backward from the neck yoke, and one from each leg loop ran upward, their ends coming together, in a properly fitted harness, just over the root of the tail, where they were lashed in pairs with rawhide and the rawhide [321] fastened to a slot in the pin of the trace toggle. This trace toggle (Figure 178b), made of bone, antler, or musk-ox horn, invariably contained two parts, a pin knobbed in the rear and slotted in front, and a square plaque with one large round hole in the middle for the insertion of the pin, and a smaller hole in each of the four corners for the attachment of the trace. The pin turned freely in the plaque and kept the trace untwisted however often the dog rolled over and over on its back; and the knob at one end, the rawhide lashing at the other, held it securely in place.



[321] →

Figure 178. Dog harness. a, complete harness, IV.D.816, 1/10; b, bone swivel for the trace, IV.D.193, 3/4.

When not in use harnesses were commonly stored on the roofs of the snow-houses but in summer the dogs wore them continually, for the long traces served to hold on the back-packs, and, in camp, to attach the animals to stones. Often their hungry wearers tore them to shreds; or the harnesses broke and were [281] patched together again. In one such emergency a woman devised a makeshift harness from a broad strip of sealskin; she slit it in three places, inserted the dog's head through the middle slit and a leg through each of the other two, tied the corners of the skin to the trace, and started the day's journey undismayed.

483 The harness worn by the Eskimo himself when hauling on the sled had a similar trace to the dog harness, and was hitched to the sled toggle in the same manner, but it consisted merely of a broad band of sealskin, less often caribou skin, that passed over the chest, and was lashed to the end of the trace without any intervening toggle (Figure 179). Women and children pulled in front of 492 the dogs, men behind. The Copper Eskimo did not use whips, but the men often 231 urged on their teams with walking-sticks. Most families had only from two to three dogs, none more than five, owing to the difficulty of feeding the animals.

492

Packs. Dog packs were flat sheets of sealskin, oval in outline, and perforated with holes along the two longer sides for cross lacings. Each end was filled like a bag, and the middle section left empty so that it would lie flat on the dog's back. The trace of the harness was drawn down over one side bag, under the animal's belly, and up over the other side bag; it was then pulled taut, and fastened to the end of the harness. At the end of summer dog packs were often cut up for boot soles, or used on the floors of the snow-huts.

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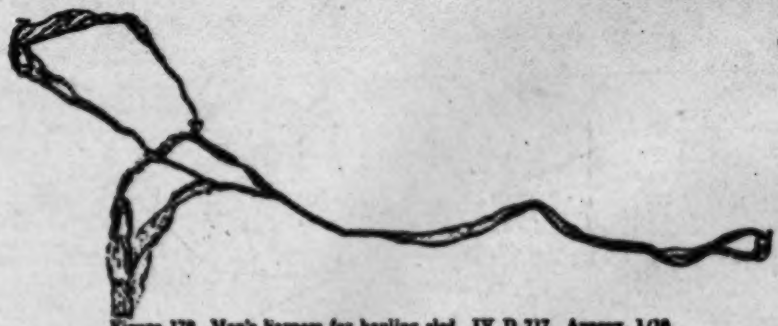

Figure 179. Man's harness for hauling sled. IV.D.717. Approx. 1/10.

482 [492] [284]

The average dog could carry only from 30 to 40 pounds, so that the Eskimo had to transport most of his belongings on his own back, inside his caribou-hide bedskin, by means of a shoulder strap and tump-line. The skin was laid flat on the ground and the articles piled in line on top of it, weight and bulk being distributed as evenly as possible between the two ends. The bundle was then rolled up and lashed with a long sealskin thong in two, or, in a large bundle, three places, the two ends and the middle. What remained of the thong became the shoulder strap; it passed from a loop held by a half hitch at one end of the bundle to a similar loop at the other. The tump-line, which was a band of sealskin or caribou skin with a thong tied to each end, fastened to the thong lashing of the bundle at any convenient points, but usually just behind the end loops.[1]

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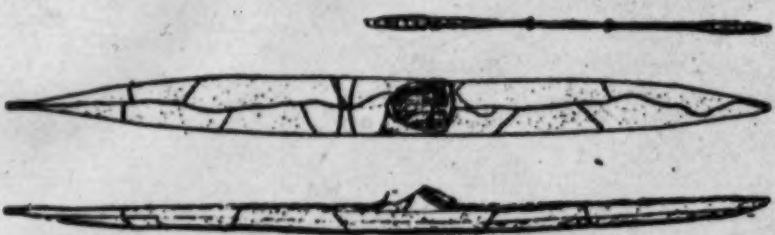


Figure 180. Kayak and paddle. IV.D.1057. Approx. 1/24.

[224]

Kayaks. The Copper Eskimo had never seen a umiak, and they used their kayaks (Figure 180) not for hunting seals, but only for ferrying across bays and rivers and for spearing caribou that had been driven into the water. Though a hunter generally made or bought a kayak at some time or other in his career,

[1] For illustration see Reports of the Canadian Arctic Expedition, vol. XII, pt. A., Pl. V, p. 288.

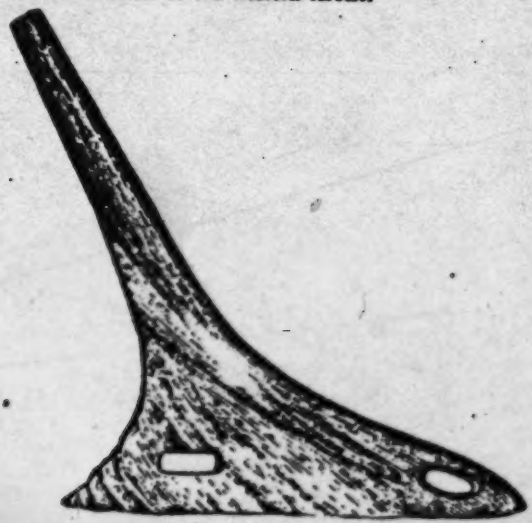
501 in most districts he used it so seldom that he either disposed of it after a year or two, or else broke up its frame and employed its wood and skin for other [422] purposes. At the time of our visit not one man in ten owned a kayak, or even the frame of one. Around Dolphin and Union Strait I saw only two kayaks, one of them owned by a Victoria Island native, but they became progressively more numerous as one travelled east to Bathurst Inlet. They kept the same shape everywhere, although they differed in length; and the frame was invariably 501 of spruce wood, the covering of sealskin. Generally they were longer, and, in 171 proportion to their length, narrower than kayaks to the westward. They lacked, also, attachments for a sealing harpoon or bird spear, and their bows and sterns had neither eyelets nor projecting horns to facilitate their transport on sleds. In Mackenzie Delta nearly every kayak bore an upstanding horn at each end, and along the Arctic coast of Alaska as far as Barrow, if not beyond, it was usual to have an eyelet in the bow and a horizontally projecting horn in the stern. Below are the measurements of five kayaks, two from Arctic Alaska, two from Mackenzie Delta, and one from Victoria Island within the territory of the Copper Eskimo.

—	Arctic Alaska		Arctic Alaska		Mackenzie Delta		Mackenzie Delta		Victoria Island	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
Total length	15		13	3	15	8	15	10	21	7
Greatest breadth	1	6	1	6	1	7½	1	6	1	3½
Distance of opening from stern	6	5	5	8	7		7		8	6
Depth of opening in front	1		1			11	1	2	1	2½
Depth of opening behind		9½		9		6½		8		7
Diameter of opening	1	4 by	1	11 by	1	4 by	1	6 by	1	6
	1	6½	1	3½	1	6	1	6		

501 In Copper Eskimo kayaks, bows and sterns were practically straight and the deck level, except just forward of the opening for the paddler, where the front of the gunwale, as usual, was raised by an angular arch. This gunwale was formed by two circular hoops of wood that bound the skin covering between them and were tightly lashed together with sealskin thongs through holes near their rims. Lashed to the deck a few inches in front of the hole was the paddle [32] rest (Figure 181), an L-shaped piece of bone with the upstanding "horn" tilted slightly backward; by resting the middle of his double-bladed paddle against this horn, the hunter obtained greater leverage. I saw no other attachment to a kayak, and was told that the hunter who carried a lance merely pushed its butt under the lashings of the paddle rest. From Capt. J. Bernard, however, I [126] obtained the curious baleen object illustrated in Figure 182, which he stated had [237] been used in some way on a Coronation Gulf kayak. Possibly it supported the skin deck, its two triangles fitting on the gunwales; or it may have been fastened on the deck and lances thrust through the triangles.

501 Figure 180 shows the wooden paddle of the kayak illustrated in the same 32 drawing. It is 11 feet long, ridged at each grip, and edged with bone on the two 322 blades. The bone is grooved to fit over the wood and secured with antler rivets that in three places have fallen out and have been replaced by iron nails. Over each of the two ridges is a sealskin ring three-quarters of an inch in diameter, made by coiling a thong of sealskin around a base of the same material; it kept the water from dripping down the blade onto the paddler's hand. Having seen 501 in the Coronation Gulf area only two other paddles, which I did not examine

closely, I cannot say whether or not this specimen is typical. One thing is certain, however, the Copper Eskimo never used the single-bladed paddle that is now so common in the western Arctic. 501



[321]

Figure 181. Paddle rest. IV.D.1048. 1/1.

As the kayak was useless in winter, the Copper Eskimo hunter commonly stripped off its skin covering and cached the frame in some convenient place, weighting it down with a few stones. One man cached his frame near the headquarters of our expedition, where I might have studied its construction in detail; unfortunately, I let the opportunity pass. If a hunter desired to cache his kayak during the summer months, when its skin cover might be torn to shreds by dogs and foxes, he sometimes raised it on stone pillars. Two such pillars on Victoria Island, built of flat slabs of dolomite, stood about 5 feet high and about 6 feet apart.

[124]
[237]

Figure 182. Kayak appliance, of baleen. IV.D.1047. 1/2.

PASTIMES

The pastimes of the Copper Eskimo have been described in Report of the Canadian Arctic Expedition, vol. XII, ch. XVII. Only two or three of them required specially made apparatus. 524

Cup and Ball. For the "cup and ball", or "ring and pin" game, as it is variously called, the Copper Eskimo invariably used the humerus of the bearded seal. They drilled one hole through the centre of the smaller end, but in the larger end as many as possible, even continuing them at times down one or both faces. Figure 183 shows a typical specimen. 524 321

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321 Stefansson[1] has illustrated a specimen made from the scapula of a seal. This is a common type in north Alaska and in Mackenzie River basin, but I never saw it among the Copper Eskimo. Either it was extremely rare there, or its ascription to Coronation Gulf is a mistake.

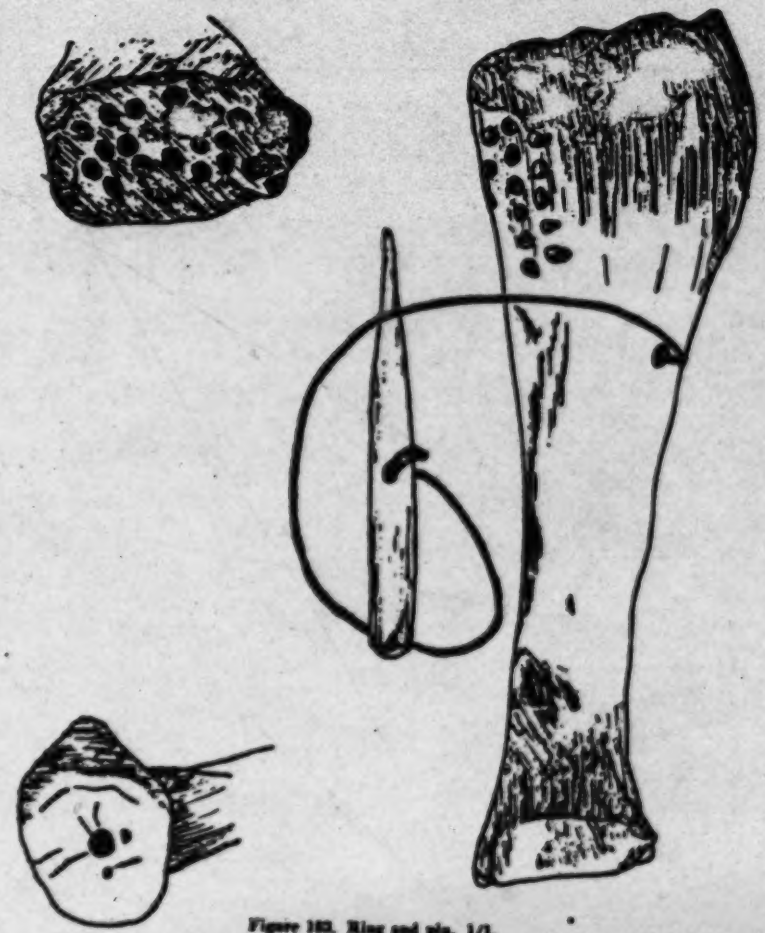

Figure 183. Ring and pin. 1/1.

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534 *Bull-roarer.* This was an uncommon toy, used only by children. I saw only one specimen in 2 years (Figure 184), and that was small and crudely made. The deep notch in the base suggests the bifid tail of a fish.

534 *Drums.* The Copper Eskimo drum or tambourine was much larger and heavier than that used in the western Arctic, and the drumstick a short, heavy baton instead of a slender wand. Any wood that could be bent into a hoop

[1] Stefansson, op. cit., fig. 91, p. 123.

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534

Figure 184. Bull-roarer. IV.D.462. Approx. 1/2.

Any wood that could be bent into a hoop served for the frame; actually the choice was limited to spruce and poplar, the preference being for poplar. Dehaired caribou skin formed the membrane; it was kept taut by a cord that ran in a groove around the rim. The handle was a piece of wood notched to fit the edge of the rim and secured by lashing; in no case that I observed was it riveted to the rim or embellished with any carving. The fore end of the drumstick, which was struck on the rim, was

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Figure 185. Drum and drumstick. IV.D.1844. 1/8.

usually covered with seal or caribou skin. The drum illustrated in Figure 185 has a maximum diameter of 18 inches. Detailed measurements of another drum are given in Report of the Canadian Arctic Expedition, vol. XII, page 222.

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

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There was one drum, on the average, to every eight or ten families. The maker was also the owner; he kept it inside his house and carried it on his sled. The whole community, however, shared its possession and any man might borrow it at will.

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Figure 186. Doll, of skin. IV.D.782. 1/3.

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Dolls. We may perhaps class dolls with the playthings, although the cutting out and sewing of costumes for them was a regular part of girls' education. I cannot remember that any had wooden faces; all that I recall were entirely of skin, from 6 inches to a foot long, and clothed as females, which was perhaps only natural, as the women's costume required rather more skill in tailoring than the men's. Figure 186 shows a typical specimen.

ART

In the field of art the Copper Eskimo accomplished far less than their kinsmen in the eastern and western Arctic, not because they lacked the same gifts, but rather because they failed to develop them. In the decoration of their clothing they displayed a feeling for line and colour, a sense of balance and harmonious composition not surpassed by any other Eskimo group. They demanded symmetry in everything. The insertions on their coats, trousers, and stockings, and the arrangement of the lemming skin pendants, all were governed by this passion for symmetry. Thus, a woman who was sewing two pairs of caribou ears to the shoulders of her coat spaced them at even distances, with the larger pair on the outside and the smaller pair within at a slightly lower level. Symmetry governed also the shapes of many implements. No Eskimo group made trimmer tools and weapons, toggles, and buckles; and the splicing of wood, especially of arrow shafts, was amazingly accurate.

One may believe, therefore, that they possessed in full measure the artistic talents of other Eskimo, but that fashion kept these talents latent. They could have produced the delicate carvings and engravings in bone and ivory that we find in Alaska, and, to a lesser extent, in the eastern Arctic, but the impulse was lacking. They did, it is true, engrave a few simple designs, and make a few rough carvings, mainly for fishing lines and needle-cases; but the "picture-writing" of the western Eskimo, and the naturalistic shapes given to toggles, drum handles, and many other objects were conspicuously absent.

Weaving, except the finger braiding of sinew for sealing lines, was an unknown art, and painting almost equally unknown. The runners of two sleds bore a series of Y designs painted in red and black on their fore ends; otherwise, paint served only to colour skin. Needle-cases and bow-case handles usually bore engraved lines, but other objects only occasionally. The principal designs are shown in Figure 187. The ring-and-dot pattern was not very common, and

Figure 187. Typical design elements of the Copper Eskimo.

the diagonal lines inside a circle I saw only on a button (Figure 37b). The standard patterns were parallel straight lines and a Y in various combinations; these two were tattooed on the face and wrists (Figures 44, 45), painted, as stated above, on two sleds, inset as strips of fur or skin in the clothing (Figures 28, 29), and engraved on many small bone objects. Fully 60 per cent of the needle-cases were decorated with two Y patterns end to end inside a frame of straight lines (Figures 94, 95, 96), and the commonest design on bow-case handles (Figure 158) was another combination of the Y figure. Radiating lines (two or more), and zigzags, were not common except in tattooing. Rarer still were

531 curved lines apart from circles unless they were conditioned by the curved surfaces of the objects on which they were engraved, as was the case with Figure 187a.[1]

532 A few bone carvings, all very crude, are illustrated in Figures 125, 126.
32] The only naturalistic forms are the bird figures attached to the needle-case in Figure 95. Among a child's toys was a figure of a loon carved from antler,
[524] and a tiny antler box with wooden bottom that represented the bird's nest (Figure 188).

Figure 188. Bone carving. IV.D.665. 1/1.

532 Noticing that children frequently outlined with their knives, in the hard
826 snow, figures of human beings or their clothing, I distributed a number of notebooks and pencils and asked both adults and children to fill them with
12 sketches. The new pastime amused them, and they quickly furnished me with about a hundred drawings of men and women in which the faces and hands received far less attention than the details of the tattooing and clothing. Those natives whom I watched began indifferently at the shoulder or the foot, and moved the pencil back and forth in every direction with no more dexterity than we expect from a 2 or 3 year-old child, and the results (Figure 189) were not
[825] dissimilar. Their drawings of animals such as the caribou, every part of whose anatomy was as familiar to them as their own, were even cruder; and how a map could indicate the geographical features of a country seemed beyond their comprehension. Evidently the sketching of scenes, like writing, was a totally new concept to them; yet I cannot believe that they lack talent, or that the second or third generation from today will not show as much proficiency in drawing as other Eskimo.

KNOTS

284 The Copper Eskimo made use of several different kinds of knots, all, except perhaps one, familiar enough to Europeans; but whether they had special names for them I did not discover. To finish off the end of a braid of sinew, or knot the end of a line, they used the common thumb knot; the "figure of eight" appeared to be unknown. Two lines were generally joined by the reef knot, but if one had a loop at the end a single sheet bend was employed. The loop itself might be made in two ways, by cutting a small slit in the end of the sealskin thong and passing the other end through it, thereby producing a kind of slip-

[1] A pair of men's outer trousers, collected by Captain Collinson at Cambridge Bay in 1852 and now in the British Museum, is decorated with a "volume" of chevrons, the only instance I have seen of this design.

[TEXT CONTINUED ON PAGE 148]

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Figure 188. Drawings by a Copper Eskimo woman.

284 [492] knot; or by a modification of the bowline. The sheep-shank was frequently used to shorten a dog's trace, so that the animal was brought nearer to the sled and to the stick of his master.

An unfinished thumb knot, where the end was not passed through the loop but remained outside so that the knot could be easily untied, was the usual knot for making one end of a line fast to a stone or a post. Just as our soldiers often use this knot for tying horses to a ground line, so the Eskimo employed it for tying their dogs to boulders. I never saw amongst them the other knot we often employ for the same purpose, the clove hitch, or its development, the clove-hitch bend. The ordinary hitch, however, came in for a multitude of uses, [356] especially while packing in summer. For instance, the household gear was rolled up in the sleeping skins and made fast by an ingenious combination of loops and half hitches, and the end of the line that remained over became the carrying strap that passed around the shoulders.